

REPORT ON AVIATION IN THE ARGENTINE ARMY

Apr. 29, 1918.

The present aviation school in the Argentine Army is the outgrowth of the Argentine Aero Club which was formed many years ago. This club was composed of civilians only and until 1910 was interested solely in balloon ascensions.

By 1912 the club became greatly interested in the aeroplane and many prospective army aviators directed their attention to the club. This was followed by interest on the part of the Government to the end that in the same year the Army Aviation School became a reality.

The entire aviation activity in the Argentine Army is now centered at this school---which is located at the station "Palomar" on the western outskirts of Buenos Aires and on the Buenos Aires and Pacific Railroad. This school may still be regarded in its infancy and suffers greatly for want of necessary funds to improve its buildings and to further and broaden its sphere of activity. The field on which the school is situated is ideal with all the space necessary for any sized plant. Besides the buildings in use as barracks and offices, are large wooden structures each capable of sheltering two big machines. The shops for construction and repair are old hangars formerly used by the aero club. The careful utilization of all available space, and excellent police of the buildings and grounds was very noticeable.

The fixed personnel of the school consists of the following:

- 1 Lieut. Colonel---Director
- 1 Major
- 4 Captains
- 4 1st Lieutenants
- 2 Sub-lieutenants
- 1 Sergeant Major
- 5 1st Sergeants
- 15 Sergeants
- 7 Corporals
- 1 Trumpeter
- 1 Drummer
- 30 Privates(permanent army personnel)
- 112 Conscripts(Privates)
- 2 clerks
- 1 surgeon
- 1 Master of gymnastics and fencing
- 1 Chief of machine-shops
- 2 Professors--photography and drawing
- 2 Draughtsman
- 1 Photographer
- 13 Mechanics
- 3 Carpenters

The school has also

- 70 Horses, draught and saddle
- 1 Ambulance
- 5 Wagons for equipage, water and rations, etc.
- 1 Automobile

Of the enlisted men above mentioned, the permanent personnel are utilized as assistant instructor, mechanics and pilots, but the conscripts perform only garrison, guard and police duty and are organized as a company of Infantry.

On April 27, 1938 I was granted the mission to visit this school and was personally conducted through the entire plant by the Director, Lieut. Colonel Alejandro Obligado of the Engineering Corps. This officer besides being a most agreeable gentleman impressed me as being thoroughly capable and efficient in the direction of the school, most enthusiastic in aviation and thoroughly posted in aviation matters and tactics all over the world. If his recommendations and requests for appropriations are heeded by the Congress here, this country will make rapid strides in aviation.

The course of instructions commences in the early months of the calendar year, coincident with the enrollment of the classes of conscripts, and the idea is to graduate pilots and utilize them in connection with the fall manoeuvres. There are five commissioned officers instructors and about the same number of n.c.o. instructors. The classes undergoing instruction comprise about 10 officers and 20 "Sub-officials" (n.c.o.'s) each year. The applications to take the course are submitted to the division commanders who also conduct the necessary physical tests. The officers generally qualify as aviators but in the case of the enlisted students only about one half the number prove satisfactory. Upon graduation, the pilots are given an appropriate badge to be worn on the uniform showing status of Pilot aviator. Owing to lack of delicate instruments for the physical tests for equilibrium, etc. such tests must be dispensed with. In addition to the foregoing class of Argentines, there is always a sprinkling of student officers from some of the other South American countries such as Bolivia, Peru and Uruguay. In the present class are one officer each from the Peruvian Army and Navy. Another Peruvian Army officer met with a fatal accident in his machine recently while attending this school.

The grade for students is restricted to Captain and Lieutenant. Marriage does not disqualify for entrance upon aviation duty.

The flying equipment of the school consists of the following:

For Instruction

No.	Machine	Motor	Horse Power
1	"Pinguin" monoplane	Anzani	30
6	Farman, biplane	Gnome	50
3	Bleriot, monoplane	Gnome	50
3	Bleriot, monoplane	Gnome	80
Military (war) machine			
1	Voisin, biplane	Salson	140
1	Morane Parasol	Le Rhone	90
1	Taube, monoplane	Morcedes	100
1	Morane	Le Rhone	80

Under Construction

6	Bleriot, monoplane	50
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Total.....23 machines

An aviation officer and a mechanic are now in Europe arranging to buy motors.

The course at this school includes balloon ascensions. The balloons available are the property of the Aero Club and are used to accustom new students to great heights and to the use of aeronautical instruments in still conditions. During the year 1917, seventeen balloon ascensions were made.

The shops at this school, though very small, are actively engaged in turning out every part necessary for the construction and repair of a machine---excepting at present the building of a complete motor. From raw material procurable in the Argentine all parts, with the above exception, can be made, and there is now a plentiful supply of frames, runners, planes and propeller blades in stock at the school. The construction of many of the parts necessary for repair of motors is so satisfactorily accomplished that it is certain that in a very short time these shops will also be able to build a complete motor. Argentina is trying to make a stool of its own thus making the shops independent of the foreign market. The workmanship observed was excellent. With more liberal appropriation of funds, well made machines could be turned out in large numbers.

Last year \$42,000 U.S. was allotted for material for aviation. With the exception of the motor these shops built a Farman biplane 50 H.P. for Uruguay last year. During its construction an Uruguayan Army Pilot, Lieut. Cesario Borisso was present and on July 11th he flew the machine from Buenos Aires to Montevideo. The cost of this machine without motor was \$1460.00 U. S. Lt. Borisso made the flight from Buenos Aires to Montevideo with only one stop. He flew at a height of 500 meters and at 110 kilometers per hour.

There has been no attempt as yet to form a flying corps owing to the small number of qualified personnel and to lack of necessary equipment. About 140 officers and men are now qualified pilots and as soon as they qualify they return to regular duty with the troops. No machines are as yet distributed among the troops---all equipment previously mentioned being held at the school.

Owing to the war this army has been unable to obtain the necessary equipment for aerial reconnaissance and photography, although Lieut. Pedro Zanni, one of the "star" aviators took a fairly successful photograph of the city of Cordoba from his aeroplane.

No attempt has yet been made to fix machine guns to aircraft---though much practice has been had in bombing from machines.

Argentina has developed some splendid and daring aviators, among them Lieut. Antonio Parodi, Lieut. Alberto G. Albarracin and Lieut. Pedro Zanni, also Lieut. Luis Candalaria.

Parodi made the trip last August from Buenos Aires to Montevideo without descending in the latter town. He was forced, however, on the return trip, by head winds, to land at Port Sauce, Uruguay to replenish fuel and returned safely to Palomar after a trip of 9 hours.

Lieut. Zanni has made several attempts to cross the Andes and failed in his last effort by only 40 kilometers. The feat was finally accomplished by Lieut. Luis Candalaria on April 13th of this year when that officer crossed the mountain range into Chile.

In November of last year field artillery practice was held near the city of Concordia. During this practice several army aeroplanes were used to observe, control, and direct the fire, with very satisfactory results.

During 1917 the pilots at this school effected 3283 flights in a total of 677 hours and covering 55,805 kilometers.

The course of the school comprises three classes, A.B. and C. Class A trains the officer personnel as pilot and observer. Class B trains the non commissioned officer as pilot for observer passenger. Class C is a short course of 2 months to accustom General Staff officers to fly as passenger for observation.

The director of this school, and the personnel of instructors and students are entitled to the fullest credit for what has thus far been accomplished and the indications are that with proper assistance from the Government this Army will possess a flying corps worthy of the name.

Aviation in the Argentine Navy has practically not yet begun. There is one machine in the Naval Arsenal at Rio Santiago, La Plata. The Navy is awaiting the return of three of its young officers now undergoing aviation experience in the United States. Upon the return of those officers it is hoped to start a school.

Accompanying this report are photographs of the school, field, types of machines, and the students.

Under separate cover I forward samples of the various woods used in the construction of the machines at this school. This wood is produced in the Argentine Republic.

1919

Number 3
 Copy 12/11/1919

2076-13

NOTED: M. L. Z.

SUBJECT Presentation of French Aeroplanes to the Argentine

Army.

From R.C.

No. 1695 Date April 14, 1919.

Replying to No. Date, 19

The following is an account of the presentation of French Aeroplanes to the Argentine Army:

On Saturday April 12th, 1919, the Minister of France, M. Gaussen accompanied by the secretary and the military attaché to the French Legation, the Argentine Minister of War, the Secretary of the Ministry, Colonel Vacarezza, Generals Broquen, Zeballos, Rodriguez, Aranzadi and others went to the Aviation School at Palomar on the occasion of the official delivery of a double Nieuport monoplane of 160 HP, and another Spad biplane of the same H.P. given by the French Government to that of Argentina.

The above were received by the Director of the Aviation School Lieut. Colonel Obligado, and after the usual introductions, the aeroplanes were delivered. The French Minister made a patriotic speech, calling attention to the progress achieved by Argentine Aviation which the Minister said he had observed with great interest. He said that "there are pilots who occupy with distinction a high position in aviation in the whole world, and they are Argentines".

The Minister made special mention of the feelings of friendship and fraternity, and as a proof of this were the aeroplanes given by France to Argentina.

The Minister of War replied thanking the French Minister for the gift and insuring him that "the Argentine aviators would always be inspired by the heroic deeds of the brave Frenchmen".

Both speakers were applauded by the numerous Italian and Argentine army men who were present.

After the ceremony of the presentation, the aviators Zanni, Parodi and Gonzalez Albarracin effected some magnificent flights which were watched with interest by all present. Later the whole party were invited to the officer's mess where champagne was partaken of, and Lt. Colonel Obligado was congratulated on the progress of the Aviation School during his directorship.

On the request of those present Major Scott of the British Army undertook some acrobatic flights in the 160 Nieuport. Major Scott's performance was much admired due to his skill and marvellous control of machine.

1000 MAY 24 1919

Number of copies.....

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2076-117

WAR DEPARTMENT

NOTED: M.H. 11/15

SUBJECT Aviation-Argentina. Foreign missions.

From R.C.

No. 1705 Date April 17th 1919, 19

Replying to No. Date, 19

During the past few weeks considerable activity has transpired in the matter of aeronautics in Argentina.

A mission of Italian aviators under Captain De Marchi is now established at the Argentine Aviation School at El Palomar near Buenos Aires. This mission consists of eight officers and eighty soldiers (aviators and mechanics). Several of the personnel are derigible pilots.

The material brought to Argentina by this mission consists of twenty two machines of which sixteen are military and six naval. Among the machines are four Capronis (bombing) of 800 H.P. Other material with the mission consists of portable field barracks for men, hangars and repair shops, also six automobiles (trucks etc) used in connection with the air service.

In conversation with the Director of the Argentine Aviation School today, that official informed me that the desired visit of this mission to Argentina was first announced through diplomatic channels and upon Argentina expressing no objection, the Italians arrived as they put it: "To demonstrate their material and to fraternize".

Some of the material is yet to be removed from the steamers but as fast as this can be done, it is being set up at the school and daily flights effected. Argentine aviators are making daily flights in the Italian machines and are also being instructed in their use by the Italians.

It is the intention of the Italians to make an extended visit here, using Buenos Aires as a base from which they will extend their exposition and demonstration to Uruguay, Paraguay, and Chile.

This visit then is an industrial and commercial propaganda.

I have been informed on good authority that the Italians are financed by the FIAT company of Italy. The British Minister here looks with disgust upon the "MILITARY color" lent to the proceeding by the appearance of the Italian personnel at all times in their military uniforms.

A high official of the Argentine War Ministry stated to me yesterday that the Argentine army is treating the Italians as national guests, supplying them their rations etc. but that the Italians are now insisting that they be permitted to pay for these things.

Cite recently a Major Scott, a British aviator, has been here with one machine and one mechanic. I am told that he represents the house of AVRO in England, makers of aeroplanes, and that he is trying to introduce products of that house. Scott has given exhibitions in fancy flying and left yesterday for Uruguay.

Upon inquiry of the British Military Attache here, that officer told me that Major Scott was not here officially but simply in a commercial sense and that he "wormed" his way into the Argentine Aviation School, where he put up his machine while here. Scott has been very popular here and has instructed several Argentine officers in fancy flying-"looping the loop"

etc.

The Director of the Argentine Aviation School stated today that it is believed that France will send a mission here similar to the present Italian visitors.

Regarding the three machines which were presented to Argentina by France on April 12th, 1919, with ceremony, they are the following:

Two Nieuports 760 H.P. each.

One Spad 780 H.P.

These three machines are of the scouting type equipped with machine guns.

As cabled by me, I suggest some similar activity on our part by which we can introduce and market our aerial production in this field.

2076-16

SUBJECT Aviation in Argentina.

From R.C. REC'D, M. I. B., O. C. S. SEP 27 1918
 No. 1804 Date August 21, 1919.
 Replying to No. Date, 19

1. Reference to your cable #126 on subject of airplanes:

MILITARY 12076-15

2. The following are numbers of reports on above subject forwarded by this office:

860--893--926--1133--1137--1206--1207--1539--1560--1575--1705.

3. The machines possessed by the Military School of Aviation at the present time are as per table herewith:

No.	MACHINES		H.P.	Type	Observations
	Mark	Motor			
1	SPAD (bought by public subscription for crossing Andes)	Hispano-Suiza	220	Double monoplane	Scouting
1	SPAD (bought from French Govt.)	Hispano-Suiza	180	" "	"
1	NIEUPORT (present French Govt.)	Gnome	160	" "	"
1	VOISIN (bought from Italians, 1916)	Salmson	140	Biplane	Bombarding and school use.
2	CAUDRON G.S. (bought from Italy)	Anzani	100	"	School
1	Morane Saulnier (bought from France reconstructed in school)	Gnome	80	Monoplane	"
1	Morane Parasol (bought from France reconstructed in school)	Le Rhone	80	"	"
2	Blériot (made in school)	Gnome	80	"	"
1	Deperdussin (bought in France)	Gnome	80	"	"
3	Enri Farman (constructed here)	Gnome	50	Biplane	"
14	Total				

Note: The three Enri Farman machines are to be replaced as soon as equal number now being constructed in school are finished.

Binding Margin.

4. There is no organization of air service at present except that of the Aviation School, the rest being only tentative.

The following, which appeared in Boletín Militar, 1st Part April 26, 1919, is the plan approved by the War Department, but for which no funds have been appropriated----except for Aviation School.

GENERAL DIRECTION OF ENGINEERS

Aeronautical Service of the Army

The Direction (headquarters or Director's office)
 The Military School of Aviation
 The Divisionary Squadrons (flotillas)
 The Military Aviation Centres
 The Aeronautic Workshops
 The Aerostatic Material Park

5. There are no air routes or plans for same.

6. The following is a list of machines that the Italian Aeronautic Mission, Squadron 350, possesses at the present time here in Buenos Aires.

MACHINES BELONGING TO ITALIAN AERONAUTIC MISSION Squadron #350

No.	Mark	Type	Mark and H.P. of Motor	Observations
3	Caproni	Biplane	2 with 3 IF 250 HP 1 with 3 FIAT 300 HP	Trimotors for bombarding
1	Fiat R2	"	Fiat 300 HP	Reconnaissance and school-----
1	SVA	"	IF 260 HP	Reconnaissance biplane 2 seater
2	SVA	"	SPA 220 HP	Reconnaissance 1 seater
2	Balilla	"	SPA 220 HP	Scouting
2	Aviatic	"	Le Rhone 110 HP	School
2	Farman Savoia	"	Colombo 110 HP	"
HIDRO-AVIONS (HIDROPLANES) OF THE MISSION				
2	Machi	Biplane type flying ship	SPA 220 HP	Scouting
2	Tonter	"	IF 260 HP	Reconnaissance

PERSONNEL, ANIMALS AND MATERIAL

pertaining to Aeronautical Service of the Army as per Tables of Organization of the Army for 1919, Boletín Militar, 1st Part, April 26, 1919.

Officers:

1 Colonel
1 Lieut. Colonel
2 Majors
6 Captains
3 1st Lieutenants
3 Lieutenants

Non-Commissioned officers:

1 Sergeant Major
5 Sergeants (1st class)
15 Sergeants
7 Corporals (1st class)
3 Corporals

150 Conscripts

Volunteers:

30 soldiers
1 Drummer or bugler
2 clerks

Civilians holding military rank

1 Surgeon
1 Administration officer

Troops:

1 Nurse

Animals and Material

20 saddle horses
1 provision wagon

NOTE: With reference to Organization of Aeronautical Service of the Army, under "GENERAL DIRECTION OF ENGINEERS" Lt. Colonel Obligado, Director of the School stated verbally that the future organization will comprise 5 Divisionary squadrons and two Military Aviation Centres (at Mendoza and Paraná, Argentina). These figures are not given in table in Boletín Militar.

Of the machines appearing in the table four have been broken, and one burned making a total of 32 serviceable at the present time.

7. It is thought very probable that the Italian Mission or Government will present the machines noted in Paragraph 6 to the Argentine Government. The Argentine officials will not deny or affirm that the gift will be made.

8. On August 6, 1919 I made a visit to the Aviation School at Palomar where I was given an opportunity to inspect all the departments and witness flights.

As will be noted in Par. 3, three of the machines were constructed at the school. One other machine was about completed, and it was given a satisfactory test on August 19th. The following is a synopsis of test taken from one of the daily papers:

"The aeroplane tested has been built in little more than a month under the direction of Engineer Lucius and Captain Gonzalez Albarracin, and is the first of a series of four Caudron machines of the same type at present in use at the school. These will be run by Anzani and Gnome-LeRhone motors of 100 HP, purchased in Italy and France by Captain Brihuega and the mechanic Taravella.

The three remaining machines will be terminated shortly, and then the construction of ten more will be hastened. These have already been started, and when they are finished will permit of the definite working of training courses and training flights may be undertaken.

In the test carried out yesterday, Captain Gonzalez Albarracin made a rapid "decollage" at 8.35. Then at a height over 600 metres the pilot, who is one of the most able of the school, made a series of evolutions, which permitted his demonstration of the excellent working order of all the parts of the machine.

The descent, after about 12 minutes flight, was equally correct. Lieut. Parravicini Diomira, later made a trip of about 10 minutes duration in the same machine, and reported very favorably on the Caudron. Therefore from date, August 20, lessons will be given in said machine. "

There were 11 unmounted motors in the workshop of foreign make, 10 French and German ranging in horse power from 80 to 200. The workshop is constructing a motor, the first, of its own.

The school workshops are small, and from our point of view, crude, but this is due to lack of appropriation, and not to energy and enthusiasm, which are great.

9. Further developments depend principally on appropriation by the Government which has not been at all liberal.

C O M M E R C I A L

10. The Government does not possess any machines, and there is no organization of air service, plans for air routes or developments as far as the Government itself is concerned.

11. There are three machines owned by civilians; Major Kingsley, formerly of the British service is the most prominent and active owner, making flights to nearby cities, estancias (ranches) over the flooded districts, to Uruguay, etc. Unquestionably his activity is for commercial purposes.

The following is taken from the River Plate American August 7, 1919.

"SOUTH AMERICAN AVIATION"---- Europeans doing their utmost to develop an Ideal Aeroplane Market while United States does nothing.

Probably there is not another continent which offers as good a field for the development of an aeroplane market as South America

offers.

It is big and rich and it has towns and ranches and water-power sites and mines and many another thing scattered over its surface which it is important for people to get to but which they cannot get to very easily because there are not enough railroads, and travel except by rail or by aeroplane is inconveniently slow.

The suggestion has already been made how exceedingly handy an aeroplane would be for a cattle buyer, who has to travel great distances, frequently over roads which cannot be readily traversed by an automobile, and who could do four or five times as much work as it is now possible for him to do daily, if he could do his traveling in a flying machine.

Cattle buyers are not the only ones who might profit by aerial means of transportation. There are any number of people to whom the power of flight would be invaluable.

EUROPEANS ARE ACTIVE

European aeroplane producers appreciate all this. Maj. Kingsley was the first great propagandist in the interest of English planes. He has flown about the Argentine in every direction. He has made the flight from Buenos Aires, across the River Plate and back again, to Montevideo, so frequently that a little aerial voyage of this kind has become scarcely worth speaking about.

Lieut. Locatelli has done the same thing for Italian machines. Four times he has crossed the Andes, and once he has flown clear from coast to coast without stopping. The sound of an Italian aeroplane motor buzzing overhead has grown so common that the people of Buenos Aires hardly take the trouble to crane their necks for an upward look at the passing flier.

Now it is learned that the French are sending a mission to undertake the same work for their machines.

In the meantime, what are the Americans, who invented the aeroplane, doing to develop their market here? Nothing! Exactly nothing!

And when the market has all been gobbled up by Europeans and the country in which heavier than air navigation originated can't get into it with a shoehorn, THE RIVER PLATE AMERICAN, which has done its duty by mentioning this matter before repeatedly will not have a word to say except "I told you so", and will not do a bit of sympathizing.

COMMERCIAL USE OF PLANES

What the English are doing is admirably told, in detail, by a correspondent of The River Plate American in London, as follows:

With the advent of peace, and the consequent passing of the aeroplane in its most effective role as an instrument of war, manufacturers in Great Britain are turning their energies to the development of the flying machine as a serious form of transport, whether for mails, passengers, or goods.

Ever since the ban on civil flying was lifted by the authorities last May, aerial transport companies have been springing up here like mushrooms. These manufacturers have emerged from the war, wherein they found their greatest incentive, and profits, in a far more favorable position than the rest of the manufacturers of the country, most of whose plants have been turned into factories for the output of munitions, and must necessarily undergo complete alterations before they can revert to their pre-war state. In the case of aircraft manufacturers the change from war to a peace footing entails nothing more than a revision of policy, from the feverish haste of constructing machines for hostile purposes to the leisurely one of diverting these, with but slight alterations, to commercial pursuits.

The war has bequeathed us several distinct types of aeroplanes, differing in size, speed and load according to the purpose for which

they were evolved. All of these may serve some useful purpose in civil aviation, but the type of heavy machine used for night bombing on the western and eastern fronts will more readily take its place in the field of commercial aviation.

SOUTH AMERICA IDEAL FIELD

Great Britain with its network of railways, and other quick transportation facilities, provides only a limited field for activities. It is in those countries where centres of importance are far apart, whose rivers are not always navigable and railways slow and as yet in a primitive state of development, that the aeroplane will score heavily. The establishment of an aerial transport service in South America would be a boon to the Latin republics, and in the long run a gold mine for the initiators. That aviation firms in England are alive to these possibilities is proved by the fact that already a number of these have sent their representatives, chiefly to the southern republics, with tenders to the different Governments for the inauguration of mail and passenger services to begin with.

Foremost of these is the firm of Handley Page, constructors of the four-engine giant Handley Page designed for bombing Berlin when the armistice stopped its activities. The company's plans for South America are on a vast scale, but as yet necessarily incomplete. They include a transport service covering all the important cities in Brazil, Argentina and Chile, embracing in the end most of the northern republics.

The first services will be over short stages, where utility and the demand for such services are proved. The stages would be from 200 to 250 miles, because where the machines could fill up with petrol at these intervals very much more useful loads could be carried. The Handley Page 2 engine model could carry 2 tons on such stages, and the large 4 engine model, 5 tons and 20 and 40 passengers respectively.

LONG TRIPS POSSIBLE

Past performances by these machines include, London to Constantinople, England to Egypt, Egypt to India, and England to India. On one of these occasions one of the larger models carried two complete two-seater fighting aeroplanes in sections from England to Baghdad, which is the best illustration of its fitness for commercial purposes. It is the policy of the Handley Page firm to adhere to the large weight carrying aeroplane of moderate speed and proved reliability. The two-engine model has a maximum air speed of 95 miles per hour, and a touring air speed of 85, while the four-engine type averages 100 and 90 miles respectively.

The fuselage in both machines is ample enough to insure complete comfort to passengers. Travelers would be allowed a suit-case, weight say 30 lbs. and additional space would be filled by mail and parcels. The personnel of the machine such as pilots and mechanics, would be selected from those accustomed to the machines actually in use. Land would have to be acquired along the route to be followed for aerodromes with the usual workshops and living accommodations and for emergency landing grounds. A large machine of moderate speed lands within a very small space, and for such a machine a suitable aerodrome with necessary buildings would occupy 100 acres. The building would have to include accommodation for the staff, repair plant and stores, and a refreshment room, or in wild districts a complete hostel for passengers. The ideal stage for extensive traffic by air is found to be 250 miles at which interval complete aerodromes will have to be built.

Along each stage one or two emergency landing grounds must be

acquired for pilots threatened with engine or other trouble. For this purpose 30 to 50 acres of flat land would be sufficient. These and the aerodromes would be illuminated for the benefit of night flyers, and would serve the purpose of light houses along the route. Up to date machines are filled with headlights for landing, so that a brilliant or expensive system of illumination on the aerodrome itself is not necessary. Land for permanent aerodromes would be purchased if suitable. Emergency landing grounds could be rented. The ground organisation includes arrangements for transport to and from aerodromes at each end of the journey.

WEATHER IS IMPORTANT

Each aerodrome must have meteorological premises and a staff to watch the weather and exchange almost hourly reports with other stations. Weather is now the airman's last and worst enemy, but in South America with the more constant and ideal atmospheric conditions of the tropics, he will have little else but smooth sailing.

Speaking of commercial aviation in South America, Mr. Handley Page said, "My plans are as yet incomplete, but I am fully alive to the great possibilities in Brazil, Argentine, Chile and other republics in the Southern Continent, and I intend in the near future to establish there a thorough aerial transport service. I am working now in Brazil and Argentine, but I prefer not to disclose my plans just yet. With regard to commercial aviation you cannot have both very high speeds---by which I mean 110 miles an hour and upwards---with great lifting power in the same machine; and of the two the latter seems to be preferable for commercial purposes. Where goods are to be carried, the large machine of moderate speed and great load capacity is the equivalent of the motor lorry as opposed to the motor car. In the case of passengers such a machine becomes an aerial bus, though its factor of comfort is very much above that of the motor bus as opposed to the pleasure car. In fact the larger the aeroplane the more comfortable it proves, and on account of its steadiness in the air, the room it can afford for armchairs and other comforts for each passenger, and the enclosed fuselage heated by electricity, though I doubt this will be necessary in the tropics. Yes, I believe in the future of commercial aviation, and I believe in South America as one of the best fields for its exploitation."

12. Attention is invited to page 147, The Review of the River Plate, July 18, 1919, wherein it is reported that a local syndicate has been formed with a capital of \$300,000 gold to establish aerial passenger and mail services, of which Major Kingsley and Mr. Carlos Alfredo Tornquist are members.

I am reliably informed by Mr. Carlos Alfredo Tornquist (a well known Argentine financier) that this syndicate is, so to speak, a mother or head of three branches which are respectively, importation, manufacturing and traveling.

Five (5) Haviland machines have already been ordered, 2 for four passengers and 3 for two passengers (exclusive of pilot and driver).

This syndicate is undertaken primarily as a commercial proposition, by men of means, who, in addition, are interested in sport. It is the intention to transport passengers at \$1000^m a seat, to their estancias along the River Plate and to Colonia (Uruguay). If the seats are not all taken, then the passengers actually carried are to pay for the vacant ones, thus furnishing a guarantee. These Havilands are expected shortly.

I was told that the reason the Haviland was selected is that it is known to be safe, which is the essential element for aerial passengers.

Later it is possible that Liberty motors may be used and motors of the Hispano Suizo type.

The hangars are to be constructed at the Aerodrome, Palomar.

13. Another syndicate with a capital of \$1,000,000 is being formed, I understood from Mr. Tornquist, but as yet no data has been given out. He has contributed \$10,000. The hangars probably will be built at the Hippodrome, Belgrano.

14. Herewith is given paraphrase of cable sent by American Embassy Buenos Aires, August 12, 1919 to State Department.

"The Italian Aviation Mission which is now in Argentina and the activities of which have been fully reported on by the Military Attaché to the War Department, has recently come into particular prominence on account of the spectacular flight which one of its members made from Santiago, Chile to Buenos Aires.

A similar mission made up of French officers with a large number of the latest planes is I understand now en route to this country.

For some months British aviators have been making exhibitions for avowedly commercial purposes as was recommended in the Consul General's telegram of December 31, 1918.

It is understood that the Argentine Government is desirous of acquiring hidroplanes for possible mail service. As yet few hidroplanes have been exhibited here and those were unsatisfactory.

Therefore it is suggested that in the near future hidroplanes of the F5L type or similar types be sent down here for exhibition purposes. This would greatly impress the public and would possibly influence the Government in the eventual purchases which might be made.

15. Extracts from letters or reports from Consul General, Buenos Aires dated August 12, 1919, on the subject of "Development of Aviation in Argentina" to the State Department.

Cable, dated December 31, 1918 from Consul General to State Department on arrival here of important delegation of aviators from Italy.

Dispatch No. 1336 of January 15, 1919 on "Opportunities for sale of aviation products in Argentina. This also refers to the eventual inauguration of aero-traffic between Buenos Aires and Montevideo.

Report Jan. 29, 1919, entitled "Europe to Buenos Aires by dirigible."

Report Feb. 19, 1919. Subject: "Argentine aerial service to Europe."

February 26, 1919 and April 12, 1919: "Development of Aviation in Argentina."

A copy of each of these reports should be in the War Department, as Mr. Robertson, the Consul General, informed me that he is instructed to send 5 copies of each of his reports to the State Department, one of which is for the War Department.

16. There is a representative of the Curtis machine here in the person of Mr. Leon Lawrence who is operating with a Mr. Escola, a retired Lt. Commander of the Argentine Navy, who formerly was the Curtis representative here.

These representatives have presented a plan to the Government for starting a small aviation school at Palomar for civilians. This has not yet been approved by the Government.

Any day, these representatives are expecting to receive four machines for demonstration and instruction purposes. Later they expect a machine for passengers and a hidroaeroplane.

17. A copy of the Regulations governing the Military Aviation is being forwarded with this report also samples of native Argentine wood used in the construction of airplanes.

3 ends sent to M. J. ④ -7-

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Enc. 1

2076-16

REGULATIONS GOVERNING
MILITARY AVIATION

IN

ARGENTINA

Don't know
COLUMBIA

SECRET
CONFIDENTIAL
Military Attaches

PRINCIPLES AND STANDARDS FOR INSTRUCTION

1. The instruction will be eminently practical in order to permit of its immediate application. The theories have as an only object to uniform general preparation of the students, and make known to them fundamental and necessary principles.

2. The object it is desired to achieve in each course is the following:

COURSE A -- To obtain officers from the different arms capable of fulfilling the double mission of aviator and military observer, specializing them in the necessary cases, and according to ability, for distant and immediate exploration; for artillery fire, destruction and combat. As far as possible an endeavor will be made so that every military aviator may obtain a diploma as a balloon pilot.

The divisionary flotillas, or those of aviation centres, must be commanded by officers holding a diploma as military aviator.

COURSE B -- To prepare non-commissioned officers from the different arms as aeroplane pilots (T's note: Spanish is "conductor") in which mission they must acquire great practice and control so as to inspire officer observers with the necessary confidence---for, as a general rule, these non-commissioned officers will drive the officer observers while the latter are carrying out their mission.

Aeroplane pilots must know how to orient themselves perfectly, and be capable of fulfilling the mission of liaison agents and even of undertaking near exploration.

COURSE C -- Each aeroplane must be provided with a motorist-mechanic responsible for the perfect running of the motor and good flight conditions of the machine as a whole. Course C fulfills the mission of converting a certain number of mechanic apprentices into motorists, who, besides keeping the motor in working order, mounting of same, must also know how to make repairs practicable on campaign.

These mechanic apprentices---who later become mechanic-motorists---must also learn the composition and construction of all the pieces of their aeroplane. Their instruction will last two years.

COURSE D -- All the students of the War School, who request same during vacations following the second year courses, shall enter Course D.

Any officer who has graduated satisfactorily from the Superior School of War, as also Artillery, Cavalry and Engineer officers, who have a sound training, and who wish to devote themselves to firing observation or to aerial reconnaissance or destruction.

The duration and extension of the courses is that strictly necessary (a month or two) in order to obtain some practice in this speciality.

COURSE E -- Reserve officers and applicants to become reserve officers will be admitted, taking into consideration their ability and the machines which can be disposed of. Applicants to become offi-

cers of the reserve shall receive elementary instruction during the three months that their incorporation in the service lasts, and this will permit them to apply for a diploma as an aviator pilot issued by the International Aviation Federation of the Pan-American Aeronautical Federation.

COURSE•F Conscripts pertaining to the Tables of Organization of the School who are most suitable on account of their ability and professions, once their period as recruits has terminated, shall be destined to workshop tasks, in order to acquire sufficient skill, to later join the Reserve personnel of workmen of the Military Aeronautical Service, in the speciality in which greatest ability has been demonstrated.

3. The Military Aviation School may only have personnel possessing good physical constitutions, excellent morale, subordinated and without any greater desire than the compliance of duty and service of country. Therefore anyone who does not possess these qualities, and who is incompatible with the exactions of abnegation, subordination, activity and resistance which aviation requires, shall be eliminated from the service.
4. The personnel must not be lost sight of; its technical and specialist qualities are subordinate to its military ones, and in all its acts morale, education and military correction should be uppermost in addition to a well-defined comradeship.
Superiors and professors shall take all possible steps to prevent the development of vanity and rivalry which aviation awakens in those who lack character and who are incapable of dominating certain instincts.
5. Aviation also gives rise to much independence in those who, when flying, leave the ground and their superiors behind; and a very marked tendency exists to forget orders received and neglect missions entrusted, when in the air.
The needed severity to eliminate this tendency completely will be adopted, and when requisite the miscreants will be expelled.
6. During the hours devoted to study and work, the students should be constantly active, and under no pretext---wind, rain, bad weather, lack of essentials-----should they remain inactive. When it is impossible to undertake one form of instruction, the students must be engaged in some other.
Thus; during the hours devoted to flight, if this cannot be performed, the sub-director will order work in shops, practice in photography, wireless or gymnastics.
7. The school automobile will only be used for service duties.

S U B J E C T S

No.		C O U R S E S					
		A	B	C	D	E	F
1	Theory of mechanical flight	yes	yes	-	-	yes	-
2	Science of statics, mechanics, resistance and motors	yes	-	-	-	-	-
3	Aerostatics	yes	yes	-	-	yes	-
4	Notions of mechanics and motors	-	yes	yes	-	-	-
5	Drawing	yes	yes	yes	-	-	-
6	Training and aerodrome flights	yes	yes	-	-	yes	-
7	Outside flight	yes	yes	-	-	yes	-
8	Application and special flights	yes	-	-	-	-	-
9	Ascents	yes	yes	-	-	yes	-
10	Photography	yes	-	-	yes	-	-
11	Wireless and signals	yes	-	-	yes	-	-
12	Knowledge of the different arms	yes	-	-	-	-	-
13	War games	yes	-	-	yes	-	-
14	Artillery fire	yes	-	-	yes	-	-
15	Reconnaissance on the terrain	yes	-	-	-	-	-
16	Aerial reconnaissance	yes	-	-	yes	-	-
17	Observation of artillery fire	yes	-	-	yes	-	-
18	Destructions	yes	-	-	yes	-	-
19	Organization, mobilization and aerial legislation	yes	-	-	yes	-	-
20	Orientation and map reading	-	yes	-	-	-	-
21	Military instruction	-	-	yes	-	yes	yes
22	Forge and soldering	-	-	yes	-	-	yes
23	Carpentry and fabric work	-	-	yes	-	-	yes

Continuation

No.	SUBJECTS	C O U R S E S					
		A	B	C	D	E	F
24	Adjusting (or lining)	--	--	yes	-	--	yes
25	Mounting of motors	yes	yes	yes	-	yes	yes
26	Gymnastics	yes	yes	yes	-	-	yes
27	Equitation	yes	yes	-	-	-	-
28	Fencing	yes	-	-	-	-	-
29	Automobiles and motor-cycles	yes	-	-	yes	-	-

COURSE FOR MILITARY AVIATORS

FLIGHT THEORY

1st Part

NOTIONS ON AERO-DYNAMICS. Resistance of the air. Resistance to orthogonal movement and oblique movement. Curved surfaces. Incidents. Nature of surfaces. Effects of resistance. Variations of the position of the centre of pressure. Plane surfaces and curved surfaces.

GENERAL FLIGHT PRINCIPLES. General outlines. Centre of gravity. Forces working on machine. Horizontal flight. Power necessary for flight. Ascending flight. Volplaning. Circular evolutions. Spirals. Looping. Stability of aeroplanes. Winds. Distribution of the masses. Results.

2nd Part.

GENERAL STUDY OF RESISTENCE OF THE AIR ON FIXED AND MOVABLE SURFACES, NORMAL AND OBLIQUE. THEORY OF RESISTENCE OF THE AIR.

Influence of the different elements on the resistance of the air. Direction of the resistance of the air on surfaces and centres of pressure. Formulas on the value of resistance. Resistance to advance. Resulting support. Influence of relation between length and breadth of wing. Influence of the shape of extreme ends of wing. Influence of the surfaces. Tandem wings. Superimposed wings. Resistance of the air on the different parts forming the structure of the aeroplane.

STUDY OF THE AEROPLANE. General principles. Effect of change of dimensions of aeroplane. Influence of the variations of motor power. Solution of problems relative to aeroplanes.

STUDY OF EQUILIBRIUM OF AEROPLANES. General principles. Longitudinal stability. Transversal stability.

PROPELLERS.

COURSE FOR MILITARY AVIATORS AEROLOGY AND AEROSTATICS

- 1° The air. Static and dynamic phenomena.
- 2° Light gases. Static support.
- 3° Aerostatic instruments.
- 4° Ascending force
- 5° Pressure on balloons
- 6° Construction of aerostatics
- 7° Vertical movements in balloons
- 8° Free balloons
- 9° Captive balloons
- 10° Dirigible balloons
- 11° History of aeronautics. Scientific applications, military and sporting application.
- 12° Aeronautical service in our Army----Plans.

COURSE FOR MILITARY AVIATORS MOTORS (by explosion)

History and evolution of motors (by explosion) Two cycle and four cycle. Diesel cycle.

RUNNING OF 4 CYCLE MOTORS. Study of the phases of each. Work indicated. Power. Technical and organic production. Study of diagrams of 4 cycle motors. Registering and indicating apparatus.

STUDY OF PARTS OF MOTORS AND THEIR DISTRIBUTION. Automatic admission and controlled valves. Control of valves. Arrangement of distribution. Distribution without valves.

CARBURATION

Combustibles. Combustion. Influence it exercises on the different agents of carburation. Velocity of gases. Theory and working of carburetors. Automatic and mechanical carburetors. Adjustment of the carburetors. Study of the principal types. Zenit, Claudel, S.U. etc.

IGNITION

General conditions. Factors which influence ignition. Advance of ignition. Diverse procedures (for producing ignition (or spark)) High and low tension magnetos. Candle power and conductors. Auxiliary first ignition and duplicate. Study of ignition in the different aviation motors, both fixed and rotating.

ESCAPE AND COOLING

General remarks on escape. Silencers. Absorbed power. Method of organizing cooling of motors. Cooling by water, by air and mixed. precautions to be taken in aviation motors.

LUBRICATION

General principles. Friction. Theory and study of lubrication in general. Influence of the various causes in lubrication. Oils. Lubrication of the different aviation motors. Comparison of the different systems. Analysis and tests of lubrication.

REGULATION AND EQUILIBRIUM

Different ways to regulate running of motors. Role of the fly-wheel. Equilibrium. Force of inertia. Centrifugal and alternating. Various efforts and processes for equilibrium. Notions on construction of motors. Cylinders. Pistons. Connecting rods. Segments. Cranks. Valves, cam key, etc. Distribution and accessory parts. Preparation to start.

ADJUSTMENT AND GETTING READY

Distribution. Carburation. Spark. Starting and stopping motors.

IRREGULARITIES IN RUNNING OF MOTORS

Causes of running badly. Localization and repair of defects. Study of each one of rotating and fixed motors in use in the School. Installation of the apparatus. Centres of gravity and gyroscopic effects.

COURSE FOR MILITARY AVIATORS
RESISTENCE OF MATERIALS EMPLOYED IN AVIATION

Elasticity. Resistance to traction. Resistance to compression. Resistance to flexion. Compound resistance. Coefficients of resistance. Models section. Principles of cross-graining. Resistance to fracture.

MATERIALS EMPLOYED IN AVIATION

Fabrics. Wood. Metals. Qualities necessary for each one of these materials. Tests to which they must be submitted. Minimum resistance.

GRAPHIC STATICS AND THEIR APPLICATION IN AVIATION

General principles. Determination of a force. Forces which act on a straight line. Forces which act on a point. Composition and decomposition of forces. Concurrent forces. Composition of parallel forces. Forces placed in any way on a plane. Decomposition of one force into two or more forces.

Baricentre or centre of gravity. Baricentre of the line of planes and of bodies. Graphic and empiric determination of the centre of gravity.

Graphic determination of the forces which act on wings and other parts of the aeroplane.

COURSE FOR MILITARY AVIATORS

PHOTOGRAPHY

I.

General notions.

II.

Procedures for taking photographs with different apparatus. Focusing. Distance. Diaphragm. Exposure and time. Instantaneous poses.

III.

Shutters and objectives.

IV.

Plates and films. Negatives and positives. uses of one and the other. Development, fixing and washing. Different formulas and preparation of developers.

V.

Papers. Printing, developing, fixing and washing for papers to be printed by daylight. Ditto for bromide papers.

VI.

Importance of artificial and natural light.

VII.

Retouching of negatives and positives (prints and plates)

VIII.

Lantern and application cone. Its description and application. Application. Test for prints. Time of exposure. Developing, fixing and washing.

COURSE FOR MILITARY AVIATORS

DRAWING

I. Geometrical Drawing.

1. Graphic exercises. 11. Construction of polygons. III. Polygonal stars. IV. Problems (Construction of spirals, ovals, ovoides, arcs, etc.)

II. Projections

1. Definitions. 11. Projections of the point and of the line on a straight line. 111. Projections of the points and of the line on a plane. IV. Projections of the point and of the line on two octagonal planes. V. Projections of plane figures. VI. Rabattement. VII. Study of projections where two planes are marked by the ground line. VIII. Projections of the polyhedrons, and of bodies in revolution. IX. Level sections of geometrical bodies. X. Penetration of solids.

III. Mechanical Drawing

Graphic representation of machines, mechanical pieces with their respective sections, etc.

IV. Perspective

1. Preliminaries. Elements of perspective. II. General rules on

points, lines and surfaces. III. Division and application of perspective. IV. Geometric data. V. Problems to find perspective of surfaces and solid bodies. VI. Reduction of distance and scale of perspective.

V. Panoramic sketches

1. Sketches of edifices (on the first plane applying perspective)
II. Of the panoramic silhouette. III. Scale of plane. IV. Representation of the shapes of ground by its curves and perspective sketches. VI. Placing points of reference, names, notes, etc.

VI. Topographical Drawing

1. Representation by appropriate drawings of different portions of ground with application of conventional signals.

COURSE FOR MILITARY AVIATORS
OBSERVATIONS AND MILITARY AERONAUTICAL SERVICE

Comprises the following subjects:

- | | |
|---|-----------------------------------|
| 1° Reconnaissances and observations | Observations |
| 2° Observers of artillery fire | |
| 3° Tactics and War games | |
| 4° Organization, mobilization and
aerial legislation | Aeronautical military
service. |
-

1° Reconnaissances and observations

- A) Reconnaissances---mounted and foot (once a week on basis of hypothetical war situations) and when possible by automobile, etc. Paths; troops, stationed and marching, water courses; railroad lines and stations; zones of terrain for selection of landing ground; places, towns and defiles.
- B) Reconnaissance as observers from aeroplane.
- a) To draw on map course of avion; preparation of reports during flight; dropping of messages; execution of simple sketches during flight; placing on map of a given tactical situation. Execution of sketches by memory, after having effected flight and report on the ground covered; reconnaissance of signals; reconnaissance of troops in different formations and at different heights in order to take photographs.
 - b) Reconnaissance on the basis of a hypothesis (a monthly trip which reaches approximately 200 Km. flight) and referring to roads; stationed troops; water courses; railroad lines and stations; ground zones; inhabited places; defiles; taking of photographs (1)
 - c) Destructions and interruptions, covering two heads: Dropping of bombs; preparation of destructions and interruptions with landings (knowledge of Regulations for Handling Explosives)
 - d) Strategic and tactical exploration
 - e) Communications
- NOTE: The items c) d) e) on basis of tactical hypothesis corresponding thereto.

2° Observers of Artillery fire

- C) Theory of observation.
Organization of artillery. Tactical employment of the different

artilleries. Knowledge of Artillery Fire Regulations. Simulated fire on map.

D) Practical

Observation of firing exercises(simulated); exercises of observation of signals; observation of isolated fire(simulated). Observation of the series:rafale,salvos.

NOTE As far as possible advantage should be taken of every opportunity to observe real artillery fire.

3° Tactics and War Games

E) Tactical themes which shall be applied to aerial exploration on marching troops, fighting troops, stationed troops. Knowledge of methods employed by different arms and services.

F) War games. Combat with small units, exercises of:

(1) Handling of machine guns and machine rifles. Application by aviators and observers on basis of tactical situations.

4° Organization, mobilization and aerial
Legislation.

Knowledge of our war organization and of that of boundary countries, etc., preparation of war plans for mobilization of an aeronautical unit; aerial legislation.

COURSE FOR PILOTS
(AVION CONDUCTORS),
THEORY OF FLYING
Chapter I.

First Part

Elementary notions on aerodynamics.
Resistance of the air. Resistance to obthogonal movement. Resistance to oblique movement. Incidents or angle of attack of surfaces. Nature of surfaces. Effects of resistance. Variations of centre of pressure. Influence of the forms in the movement of the centre of reaction.

Second Part

General principles of flying. Centre of gravity of the aeroplane. Forces which act on machine. Equilibrium in horizontal flight. Necessary power for flight. Ascending flight. Volplaning. Circular evolutions. (Looping) Circle of death. Stability of apparatus. Longitudinal stability. Transversal stability. Influence of the propeller. Stability of the route. Irregular wind. Distribution of the masses. Efficiency of the aeroplane. Practical advice on manoeuvres and false manoeuvres.

NOTE: This course is elementary and no calculation nor mathematical demonstration will be made of it.

Chapter II.

First Part.

Study of resistance of the air on movable and fixed surfaces, normal and oblique ones. Report of experimental results. Polarity of Eiffel. Resistance of air on different bodies. Theory of resistance of the air. Experimental aerodynamics data employed in construction of airships.

Second Part.

Aerial propeller. Fundamental data. Experiments on propellers. General Theory of propellers. Results deducted from formulas.

Third Part.

Equations of equilibrium.

- 1° Forces working on aeroplane
- 2° Equations of equilibrium of aeroplane
- 3° Some results deducted from equations
- 4° Work exacted from motor in horizontal trajectory. Variations of useful work with the incidence.

- 5° Running of aeroplane by changing characteristics.
- 6° Oblique movement.
- 7° Work exacted by different inclinations of trajectory
- 8° Start of aeroplane ("taxing" or departure).

Fourth Part.

Equilibrium of aeroplane.

- 1° Longitudinal stability.
- 2° Transversal stability.
- 3° Warping of wings or use of ailerons.
- 4° Movement or circular manoeuvres (turning)
- 5° Action of the wind
- 6° Gyroscopic effects.

Motor force of aeroplanes.

Calculation of weight which may be lifted by unit of motor force.

AERONAVIGATION

Chapter III.

Physical constitution of aerial ocean.
Study of aerial ocean from the dynamic point of view. The winds
and their influence on the velocity of aeroplanes. The rigidity of
trajectory and orientation. Compass. Problems to be solved with
compass. Calculation of distances covered.
Preparation of aerial trips.

COURSE FOR PILOTS
(AVION CONDUCTORS)

Aerostatics and Aerology

Elements of physics.

Physical condition of bodies. Gravity. Density and specific weight. Kinematics. Gravitation. Fall of Bodies. Atmospheric pressure. Value and measuring of atmospheric pressure. Expansibility and compressibility of gases. Atmosphere. Measuring barometric height. Mixture and diffusion of gases. Equilibrium of bodies submerged in the atmosphere. Calories. Temperature. Measuring of temperature and different atmospheric scales. Mariotte. Law. Theory of aerostatics. Ascending force. Real and apparent weight. Aerial soundings. Aerostatical instruments. Elements of meteorology and climatology. Simple problems related with previous physical elements.

Practical works.

Excursions in free balloon. Nomenclature of same. Preparation of material. Construction and preparation. Driving and piloting. Military importance. History of free and captive balloons.

Instructive Visits.

Gas Works. National meteorological Office.

COURSE FOR PILOTS
(AVION CONDUCTORS)
MOTORS (by explosion)

History and evolution of motors (by explosion). Two and Four cycle. Diesel Cycle.

Working of four cycle motors. Study of each one of phases. Work indicated. Potency. Technical and real production. Study of diagrams of 4 cycle. Indicating and registering apparatus.

Study of organs of motors and distribution. Valves for automatic and governed admission. Working of valves. Arrangement of distribution. Distribution without valves.

CARBURATION

Combustibles. Combustion. Influence exercised by the different agents in carburation. Velocity of the gases. Theory and working of carburetors. Automatic and mechanical carburetors. Regulation of carburetors. Study of principal types. Zenit, Claudel, S.U., etc.

IGNITION

General conditions. Factors influencing ignition. Advance of ignition. Different procedures for producing ignition. Magnetos of high and low tension (pressure). Candle power and conductors. Auxiliary starting ignition and duplicate. Study of ignition in different rotating and fixed aviation motors.

ESCAPE AND COOLING

General remarks on escape. Silencers. Absorbed power. Method of organizing cooling of motors. Cooling of motors by water, by air and mixed.

OILING (LUBRICATION)

General principles. Friction. Theory and study of lubrication in general. Influence of the various causes in lubrication. Lubricants. Lubrication of the different motors in aviation. Comparison of the different systems. Analysis and tests of lubricants.

REGULATION AND EQUILIBRIUM

Different methods for regulating running of motors. Role of the fly-wheel. Equilibrium. Force of inertia. Centrifugal and alternating. Different efforts and procedures for equilibrium. Notions on construction of motors. Cylinders, Pistons, connecting-rods, segments,

cranks, valves, carter-key, etc.
Distribution and accessory parts. Preparation for running.

ADJUSTMENT AND GETTING READY

Distribution, Carburation. Ignition. Starting and stopping motors.

IRREGULARITIES IN RUNNING OF MOTORS

Causes of bad running. Localization and repairing defects. Study of each one of the rotating and fixed motors in use in the school. Installation of the apparatus. Centres of gravity and gyroscopic effects.

COURSE FOR PILOTS
(AVION CONDUCTORS)

1. Geometrical Drawing

1. Of the lines. 2. Graphic exercises. 3. Of the angles. 4. Of the triangles. 5. Of the quadrilaterals. 6. Polygons. 7. Starred polygons. 8. Of the circumference and of the circle. 9. Of the angles in the circumference. 10. Problems (construction of spirals, etc.) 11. Problems of curvilinear figures. 12. Interlacing of curved and straight lines. 13. Rings.

II. Projections

1. Definitions. Projections of the point and of the line on a straight line. Projections of the point and of the line on orthogonal planes. Projections of plane figures. 6. Rabattement. 7. Study of projections where planes are shown with ground line. 8. Projections of the polyhedrons and of bodies in revolution. 9. Plane sections of geometric bodies. 10. Penetration of solids.

III. Mechanical Drawing

Graphic representation of machines, mechanical pieces, with their respective sections, etc.

IV. Perspective.

1. Preliminaries. Elements of perspective. 2. General rules on points, lines, surfaces. 3. Division and application of perspective. 4. Geometrical data. 5. Problems to find perspective of surfaces and solid bodies. 6. Reduction of the distance and scale of perspective.

V. Panoramic Sketches.

1. Sketches of edifices (on first plane) applying perspective. 2. Of the panoramic silhouette. 3. Scale of planes. 4. Representation of trees, woods, etc. 5. Representation of ground accidents with curves and sketches of perspective. 6. Placing of references, names, notes, etc.

VI. Topographical Drawing

1. Representation by appropriate drawings of the different portions of ground with application of conventional signals.

COURSE FOR PILOTS
(AVION CONDUCTORS)

PHOTOGRAPHY

I.

General notions.

II.

Procedure for taking photographs with different apparatus. Focusing. Distance. Diaphragm. Exposure and time. Instantaneous poses.

III.

Shutters and objectives.

IV.

Planes and films. Negatives and positives. Uses of one and the other. Development, fixing and washing. Different formulas and preparations for developers.

V.

Papers. Printing, developing, fixing and washing for papers to be printed by daylight. Ditto for bromide papers.

VI.

Importance of artificial and natural light.

VII.

Retouching of negatives and positives. (Prints and plates)

VIII.

Lantern and application cone. Its description and application. Application. Test for prints. Time of exposure. Development, fixing and washing.

COURSE FOR APPRENTICE MOTORISTS

DRAWING

Geometrical Drawing

1. Graphic exercises. 2. Problems. 3. Rectilinear interlacing lines.
4. Polygons, applications. 5. Problems of curvilinear figures. 6. Curvilinear interlacings. 6. Rings.

Projections

1. Definitions. 2. Projections of the point and of the line on a straight line, 3. Projections of the points and of the lines on a plane. 4. Projections of the point and of the line on two orthogonal planes. 5. Projections of the plane figures. 6. Rabattement.
7. Study of projections where the planes are marked with ground line.
8. Projections of the polygons and of the bodies in revolution.
9. Plane sections of the geometric bodies. 10. Penetration of solids.

Mechanical Drawing

Graphic representation of machines, mechanical pieces, with their respective sections, etc.

REGULATIONS FOR THE "MILITARY SCHOOL OF AVIATION"

The "Superior" Decree dated August 10, 1912 creates the School of Military Aviation, the regulations and plan of studies of which is the following:

Art. 1° The Military School of Aviation shall be the adviser of the General Director of Engineers in all that concerns aerial navigation. It instructs and insures the recruiting of personnel necessary for aviation services as determined by war organization.

Art. 2° The Military School of Aviation comprises:

- a) The Direction (Headquarters)
- b) The professors and personnel necessary for practical instruction.
- c) The officers and non-commissioned officers who are students in pilots' course, and officer students in observers' course.
- d) The aeronautical section attached to the School, and
- e) The material and installations.

THE DIRECTION (Director's Office or Headquarters)

Art. 3° The Direction of the Military School of Aviation shall be in charge of a Director-in-Chief, whose designation shall be submitted to the approval of H.E. the Minister of War.

Art. 4° He shall have the attributes and disciplinary powers of the Chief of a Regiment in connection with personnel under him.

Art. 5° The Direction of the Military School of Aviation shall depend directly on the General Direction of Engineers.

THE PROFESSORS AND PERSONNEL FOR PRACTICAL INSTRUCTION

Art. 6° The appointment of professors to take charge of classes for theoretical preparation, shall be proposed by the Director of the Military School of Aviation, and sent up to the General Direction of Engineers for approval.

Art. 7° The personnel of instructors may include the students who have obtained highest marks on receiving diploma as military aviators, and it necessary professionals will be engaged by contract.

Art. 8° The personnel of officer and non-commissioned officer instructors shall be commissioned with the Military School of Aviation for a period of one year, to be renewed by halves. In special cases this period may be prolonged by ministerial decision.

Art. 9° During this time, officers and sub-officers shall maintain their position on the roster, and will return to their original posts once their commission with the school has terminated.

STUDENTS

Art.10° The personnel of students of the Military School of Aviation shall be composed of officers and non-commissioned officers of the Army and Navy, and Reserve officers designated for this purpose.

Art.11° The personnel of reservists shall not exceed one third of total number of students at the school.

Art.12° The officer-students will be divided into two groups: one of student pilots and another of student observers.

Art.13° The non-commissioned officers shall only be instructed as pilots. All this personnel shall keep position on the roster with the note added "commissioned with Military School of Aviation".

Art.14° Officers of the Army who desire to take up courses in aeronautics shall send in their application to the Ministry of War via military channels.

Art.15° Officers of the Navy should address their applications to the Ministry of Marine, who will communicate the list of candidates to the Ministry of War.

Art.16° The candidates shall undergo a medical examination to verify normal condition of the different organs, especially of heart, lungs, ears and eyes.

Art.17° The applications shall be accompanied by the following data:

- 1° Medical examination comprising also weight and physical conditions (aptitudes) of the candidate. This certificate shall be visaed by the Chief of the Corps or Department to which the person interested belongs.
- 2° Mechanical knowledge or driving of automobiles, motor-cycles and sport fitness.
- 3° Opinion of Chief of Corps or Department on former and general ability (and suitability) of candidate.
- 4° Specification whether or not candidate presents himself for pilot or observer course.

OFFICER OBSERVERS

Art.18° Officers favorably reported on for aeronautical service may be called upon for ascents and aerial observations, when awaiting their turn to enter the school.

Said officers may follow courses indicated under Nos. 1, 4 and 5 of Art. 29, and may pass the corresponding examinations.

NON-COMMISSIONED OFFICER PILOTS

Art. 19° Candidates must have spent at least two years in the lines, and be ready to reinlist in order to remain for a minimum of a year in the Army after graduation from the Military School of Aviation.

Art. 20° Applications are to be accompanied by the following data:

- 1° Time due to complete service and time for which the volunteer reinlists.
- 2° Medical examination as for officers.
- 3° Instruction and sport fitness.
- 4° Profession, indicating workshop or factory where it has been exercised.
- 5° Conduct.
- 6° Opinion of commander of company, squadron or battery and of Chief of Corps on aptitude of candidate.

Art. 21° The same regulations and programmes of practical instruction in use for officers shall be applicable for non-commissioned officers.

SELECTION TESTS

Art. 22° Officers and non-commissioned officers designated must undertake a series of ascents in a free balloon under the direction of pilots holding diplomas of the Military School of Aviation, who, in each case, shall inform the Director of the School respecting the ability demonstrated by the candidate, temperament, knowledge of sports and sporting qualities.

Art. 23° With this report the Director of the School shall decide on elimination of those who do not possess necessary qualities to take course.

AERONAUTICAL COMPANY

Art. 24° The Military Aeronautics Section shall be attached to the Military School of Aviation, for the service of same and will consist of:

- 1 Captain
- 3 Officers
- 1 Assistant Sergeant
- 5 1st Sergeants
- 15 Sergeants
- 7 Corporals (1st class)
- 3 Corporals
- 10 Volunteer soldiers
- 150 Conscripts and
- 20 Apprentice motorist (mechanics)

Art.25° Non-commissioned officers and conscripts having professions or trades which can be utilized shall be preferentially appointed in aeronautical services.

Art.26° The professions having preference shall be the following: Engineers holding diplomas, mechanical adjusters, lathe-makers, electricians, automobile drivers, (explosion) motor drivers, drivers or chauffeurs of steam-boilers, boiler-makers, motors for aeroplanes, smiths, sawyers, iron-workers, carpenters or cabinet makers, photographers, specialized workmen in balloons or aeroplanes, fabric-workers, rope-makers.

MATERIAL AND INSTALLATIONS

Art.27° The material and installations comprise: the aerostatic park and aerodrome at El Palomar; instruments and scientific apparatus.

Art.28° The workshops which insure the conservation and repair of material shall be organized and be operated in accordance with the rules laid down by the Direction of the School.

COURSE FOR MILITARY AERONAUTS

Art.29° The technical and practical courses of aeronautics shall last six months and plan of studies shall be the following:

- 1° Notions of meteorology.
- 2° Course of aerostatics.
- 3° Course of aviation
- 4° Photography applied to aerial reconnaissance and topographical drawings, (maps).
- 5° Different methods for signalling, communications, and reading of maps.
- 6° General knowledge of mechanics and principles for construction of apparatus.
- 7° Construction and handling of motors.
- 8° Study of different types of aeronautical war constructions for service in the principal armies.

All these courses shall have a theoretical and practical part, or rather that of application, and the students must pass examinations established.

Art.30° The detailed programmes corresponding to this course and instructions relative to internal regimen, shall be proposed by the Direction of the School, and sent up to the General Direction (Head-quarters) of Engineers.

COMPUTATION AND CLASSIFICATION OF
SERVICES

Art.31° The officers who obtain diplomas as aviator pilots, shall be credited as if in command of troops, with reference to promotion.

DIPLOMAS

Art.32° The Military Aeronautical Service, comprises free balloons, dirigible balloons and aviation apparatus.

Art.33° Diplomas to be conferred as follows:

- a) Diploma of an aeronaut for first class apparatus (free balloons)
- b) Diploma of pilot for dirigible balloon, for apparatus of second class (dirigible balloons)
- c) Diploma of military aeronaut.
- d) Diploma of an aviator pilot, for apparatus of the third class (aviation apparatus)
- e) Diploma of a military aviator.

Art.34° These diplomas shall be granted in the following way:

Diplomas a) b) and d) shall be granted by the Argentine Aero Club, in accordance with the Regulations of the International Aeronautical Federation.

Diploma c) shall be granted by the Ministry of War on the proposal of the Director of the Military School of Aviation to officers who possess the following four qualifications:

- 1° To be possessor of the diploma of the Argentine Aero Club of the first or second class.
- 2° To have served at least a year in the School of Military Aviation.
- 3° To possess complete theoretical and practical instruction, and to be recognized as able, after a series of ascents, not only to conduct free and dirigible balloons, but also to conduct student aeronauts.
- 4° The officer candidates, besides having given proof, during the service, of possessing special qualities, of calmness, serenity and decision, must undergo an examination before a Board.

The diploma e) as military aviator is granted (or conferred) by the

Ministry of War on the proposal of the Direction of the School, to officers on active service in the Army who possess diplomas as aviator pilots of the Argentine Aero Club, and who have undergone a series of tests as outlined in the programme drawn up each year by the Director of the School, and in accordance with the progress of aviation. The applicants must render a satisfactory theoretical examination on aviation before a Board. However, the pilot aviators provided with diplomas of the Argentine Aero Club may be exempted from the practical tests and from examination---which, on the other hand, they should have taken as pilots. Furthermore, their performance of public notoriety, would be superior in quality and number to those exacted to obtain diploma.

Art. 35° The Examination Board, will consist of officers of the General Staff of the Army and Navy, Inspectors of Artillery and Engineers, as well as of the members of the Direction of the School.

BOLETIN MILITAR No. 1160---2nd Part, 1918.

Military Aeronautics. Compensation and insignia to be awarded soldiers who devote themselves to it:

Federal Capital, October 26, 1916. As the military aeronautical services have been regulated during this year, and it is necessary to stimulate and reward the abnegation of those who are in constant danger while practising it for the welfare of their country, and taking into consideration the proposal made by the Direction of the Military School of Aviation and advice given by General Direction of Engineers:

THE PRESIDENT OF THE ARGENTINE NATION

D E C R E E S

Art. 1° The soldiers who devote themselves to Aeronautics (aerostatics and aviation) and who are obliged, in compliance with their duties, to undertake flights and ascents, as a compensation for the constant danger in which their position places them, and in order to compensate them for the exposure this causes them, shall have the following advantages.

- a) Time of service in the Military Aeronautical service will be considered as spent in command of troops on campaign, and shall be computed as double for retirement purposes.
- b) They shall receive a supplement or special bonus (gratification) equal to 25% of pay due, if they are officers, and 50% if they are non-commissioned officers.
- c) Cases of accidents shall be regulated as per decree dated March 20, 1915, B.M. No. 909 2nd Part.
- d) The titles or diplomas obtained will be taken very much into account to classify them for appointments.
- e) Officers and soldiers who become observers during their apprenticeship, and time utilized in this speciality shall have the same prerogatives.

Art. 2° The badges to be worn by the officers of the Military Aeronautical Service will be as follows:

Officers:

- a) The regulation badge as per Superior Decree of date Nov. 7, 1913 (B.M. No. 778, 2nd Part)
- b) Non-commissioned officers, aeroplane pilots:
An eagle of 5 cms. long by 8 cms. wide.
Non-commissioned officers, pilots of free balloons
A Phrygian cap sustained by two outstanding wings.

Same dimensions as former.

Non-commissioned mechanical officers for aeroplanes (motorists)

A Gnome motor of 4 cms. diameter with propeller of 8 cms. height.
These badges will be worn on the outer side of both sleeves above the insignia of rank. They will be of fine gold embroidery.

The non-commissioned officers of the previous categories, shall wear uniforms of fine cloth, boots of the "archivista" (clerk) type, and insignias similar to those of non-commissioned officers of the Wireless Service.

The Direction of the Military School of Aviation will send the necessary requisition to the General Direction of Administration.

c) The Military Aeronautical Service shall wear the Engineers uniforms and, as an emblem, a flying dragon in an attitude of offense.

Art. 3° The expenses originated in compliance of present decree will be met from General Appropriations of War Budget.

Art. 4° To be communicated to whom interested, published, etc.

IRIGOYEN

Elpidio Gonzalez.

NOTE: The word "Direction" frequently used in above translation means "headquarters" or "office of director including staff".

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2076-17
Aviation in Argentina

R.O.

September 11, 1919.

1915

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The Italian Aviation Mission.

The stay of the Italian Aviation Mission in Argentina is about at an end, and towards the latter part of September, the mission, headed by Baron de Marchi, returns to Italy.

The aeronaval section will remain in Argentina. It has established its base of operations at San Fernando (Province of Buenos Aires) and very near the Capital.

The Mission has made a very favorable impression on the Argentine public, and the feats performed by Lieut. Locatelli and sergeants B6 and Conforti---the latter are two expert hydroplane acrobats---have caused not only the admiration but also the surprise of the Argentine public.

A few days after Lt. Locatelli's remarkable flight from Pacific to Atlantic, Lieut. de Rissis flew from Buenos Aires to Asunción, Paraguay making several stops on the way. On the return of de Rissis from Paraguay, the Chief of the Mission telegraphed to headquarters requesting permission to give hydroplane to Paraguay. This permission was granted, and furthermore the Italian Navy made a present to the Argentine Navy of all the buildings and installations at San Fernando as well as of 4 hydroplanes and one hydracraft.

As a farewell feat, Lieut. Locatelli of the Italian Mission has announced a flight from Buenos Aires to Rio Janeiro, Brazil. He intends to reach Rio Janeiro the day after leaving Buenos Aires, and will take ship from that port to Italy.

Arrival of French Aviation Mission.

The French Aeronautical Mission arrived in this city shortly before midday on September 6, 1919.

Composing the Mission---the objects of which are exhibition flying and commercial study---are Commander Guichard, in charge, who left this country and his ranch in the province of Salta, to fight for France; Lieutenants Jean Guillon and Jean Guichard, the last a brother of the Commander coming to attend to the commercial part of the venture; adjutants René Monard and Jules Abel; sergeants Maurice Guillet and Roger de Jouette, and quartermaster Jean Gondal.

The mechanics accompanying the mission number 31.

On arrival the Mission was received by the Chief of the Argentine Military Aviation School, the French Minister's representatives of the Italian Aviation Mission and many members of the French community.

The Mission brings the following apparatus:

4 aeroplanes F.50 ("Farman") propelled by two Lorraine mo-

of 375 H.P. each, capable of carrying in addition to the pilot a mechanic and four passengers; a "Breguet" with Renault motor of 80 H.P. suitable for pleasure craft, and four "Glissours" Lambert.

In addition there are eight adjustable hangars, which, with the exception of those intended for the hydroplanes, will be set up in the aerodrome at Palomar.

The site of the aviation station has not yet been decided upon, but it is possible that it will finally be located on the river-side between Belgrano and San Fernando (suburbs of Buenos Aires.).

It is reported that with the "Glisseur" machines the French Mission intends to start postal and transport services between Argentina and Paraguay.

Commercial Aviation in Argentina

The daily press reports the formation of various aviation companies in Buenos Aires.

It is stated that two British companies, one French, one American and one Italian will form the nucleus of a Central Aerial Station in Buenos Aires.

The first company which has practically completed its plans and is only awaiting arrival of machines to start passenger and postal service is called "The River Plate Aviation Co." It is directed by Major Kingsley of the British Army and the business manager is a Mr. C.H. Thompson.

The French company, it is understood, came with the official French Mission, and the business director is a Mr. Francisco Henrich of Portalia and Co., a powerful commercial concern in Argentina.

The Italian company will be managed by Engineer Bonini. Handley Page's representative is a Mr. Hinds, and this company is planning to start a service from Buenos Aires to Pernambuco, Brazil. It is reported that the representative recently received a cable from headquarters informing him that about 15 machines had been shipped to South America. The company has a capital of \$1,000,000, and the machines to be used can transport 40 passengers each.

Mr. Lawrence Leon is the representative of the Curtiss Co. (See Report # 1804 in this connection).

Each one of the companies mentioned will use respectively: De Havilland machines manufactured by Aircraft Co. of Easton, London; Breguet, Nieuport, Spad, Herbemont, Goliath, Voisin, Farman; S.V.A. and Balillas; Handley Page; Curtiss.

The return to Argentina of Major Scott has also been announced. He is the representative of the A.V. Roe Co. Ltd. of Manchester, manufacturers of the Avro machines. Both Major Scott and his machine were very much admired in Argentina, and although he was promised that some Avros would be purchased by the School of Aviation, lack of funds has so far prevented the realization of the transaction.

All these aviation companies had intended establishing a separate aerodrome and school for civilians, however the Argentine Aero Club called the representatives to a meeting, and it was arranged that only one would be built. In this aerodrome all the different hangars will be built, each company contributing proportionately to the building and preservation of the central aerodrome.

Still another commercial representative -- the Caproni firm of Italy has entered the field. He stated to a press representative that towards the end of September a Caproni triplane will start from Lisbon, Portugal to Rio Janeiro, Brazil. The triplane has 5 motors and H.P. is 2,500. Passenger capacity, 60.

The Caproni representative also announced imminent arrival in Buenos Aires of a 600/900 H.P. Caproni, with a passenger capacity of 32 persons. This machine is to be utilized for passenger service between Buenos Aires and Montevideo. It was also stated that an immense plane of a completely new type is under construction. It will have 12 motors, total H.P. 3,600 and room for 120 passengers. It is expected that this machine will leave Sesto Calende (Italy) for Buenos Aires in about three months' time. It is calculated that the trip will be made in three or four days, including stoppages at various ports en route.

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SUBJECT Franco-Argentine Aerial Transportation Co.

From R.C. --- Economic

No. 1851

Date October 23, 1919

Replying to No.

Transportation --- 8

Air --- 25

The following is translated from "La Nacion" October 11, 1919:

"At the headquarters of the French Aviation Mission, the Franco-Argentine Aerial Transportation Co. was definitely organized yesterday. As is known the formation of the company has been under way for some time---under the direction of Lieut. Hentsch, and on the basis of a capital of \$1,000,000. Already about \$700,000 has been subscribed.

The first Board of Director is formed by the following:

B. Sauberan, M. Quintana, G. González, S. Guthmann, G. E. Artaux, J. Hentsch, B. Jimenez Lastra, M. Hector Berger and M. A. Traverso.

Mr. Jean Guichard has been appointed administrator of the company."

In connection with the above attention is invited to my Report #1804 par. 13, where it was unofficially stated that a company with a capital of \$1,000,000 was being organized.

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SUBJECT Aviation Notes----Argentina.

From R.C.----ECONOMIC

REC'D, M. I. B., O. C. S.

DEC 26 1919

No. 1872

Date November 17, 1919.

Replying to No.

Date

19

"Air-----25".

With the heading "SEVEN YEARS OF AVIATION AT PALOMAR" the newspaper "La Razon" gives the following account of the growth of Argentina's Military Aviation School.

"On the 8th of September, seven years ago, the then Minister of War, General Velez, inaugurated our first aero-military institution, and he was the passenger of the French aviator Paillotte in the first flight which took place at the brand new aerodrome.

Seven years have placed Argentina's School in the front rank of South American ones, all Argentine pilots have been trained there, and many pilots of neighboring Republics as well.

In spite of very scant appropriations for its upkeep and progress, the school has gone ahead, and managed to keep up with the times.

Besides the two Caudron machines, spare pieces and motors for eight machines of the same type have been purchased in Europe; the school has received a gift of two Nieuport biplanes and a Spad double monoplane of 165 and 180 H.P. respectively, as well as two S.V.A. biplanes. These gifts have been from the French and Italian Governments, and have been a welcome addition to the decidedly old-fashioned machines possessed by the school. The school also constructed a Caudron aeroplane completely.

Statistics relative to the graduates from the school are as follows:

Pilots graduated since 1912----- 63 of these, 19 are foreigners.

Machines constructed in the school:

5	Farman
13	Blériot
1	Morane-Saulnier
3	Caudron

Flights made up to date:	19,698 trips.
Time employed:	4,062 hours
Kilometers covered:	334,830 kilometers."

On being interviewed, Captain Francisco Torres of the Argentine Military Aviation School made the following statements to "La Prensa" recently:

"The general conditions in the country, its geographical constitution, the immense plains and the tremendous distance between towns, convince me that aeronautics are in for a golden age here.

Our Aviation School has forged ahead wonderfully in spite of adverse criticism sometimes indulged in by our countrymen when comparing our school to those abroad. This is especially true

being into consideration the funds at its disposal.

European aviators who have visited us during and after the war have not disguised their surprise at our organization and capacity.

At the Military Aviation School complete aeroplanes have been built, and this means all the general paraphernalia for construction of same, including workshops, machinery, tools and above all the progressive training of an intelligent personnel. Our workmen are modest, but all honor is due to their scrupulous honesty in tasks on which depend the life and safety of the aviator.

We have now more than 15,000 metres roofed in, running water and our own electric light. Thus, it may be stated that the Military Aviation School has a solid basis on which to build in the future.

Another subject of interest relating to that under discussion is the training of pilots--civilian--for the reserve. This matter has been taken up several times, but has not received the attention it deserves. Once a trial was made, and all the men who took the course graduated, however, as no provision was made for them in the Budget, the matter was dropped. Thus, if our Military Aviation School is simply to train pilots for active service, it will never contribute towards progress of our aeronautic industry. If a different method was put into operation and fifty per cent of the pilots turned out by the school were civilian reserves, we would soon find them seeking fields for their activities, creating private industries, or recruiting men to teach them what they themselves had learned.

There is no doubt that of all South American countries, Argentina is the most favorable for the adaptation of aviation as an ideal means of transportation; thus everything should be done to encourage its progress, but we can only hope to have an efficient air service some day on the basis of generous assistance from the Government."

NAVAL AVIATION SCHOOL.

On November 10, the Ministry of Marine appointed Lieut. Marcos Zar of the Argentine Navy as technical director of the Aeronautic School started by the Italian Government in Argentina and of which it made a present to this country.

Lieut. Zar was in the United States and in Europe training, besides two other Argentine naval officers: Lieuts. Fitz Simon and Deferino Pouchon.

These three officers graduated from the Aviation School at Pensacola (Florida) and obtained their degrees as United States Naval Aviators. Then they crossed over to Europe with the American Expeditionary Forces. Later they entered a French Aviation School. There they obtained diplomas as bombardier pilot observers of French Tellier and Donned hydroavions. Then Lieut. Fitz-Simon went to England, and Lieuts. Zar and Pouchon requested details as observers with American forces.

Lieut. Zar finally went to Italy and took the acrobatic and other courses at the 'Aviatic' and 'S.A.M.L.' Schools. Later he went to the Milpensa School at Milan.

AVIATION MISSIONS AND COMMERCIAL COMPANIES.

Since its arrival in Buenos Aires, the French Aviation Mission has been busily engaged in demonstration flights with passengers to show that the dangers of aerial transportation are practically nil.

Many flights have been made carrying as passengers, members of the Diplomatic Corps, the Presidents of the numerous Clubs, Military, Naval, Jockey, etc., and various generals and colonels of the Argentine Army.

The Mission has been using the "limousine" and "coupé" types of machines for passengers, and these demonstrations simply precede

the running of regular aerial passenger and postal lines.

Gliders of the Lambert type, with a 220 H.P. Packard motor are being used for frequent excursions on the rivers.

In connection with the recently formed "Franco-Argentine Aerial Transport Service" the Buenos Aires Standard publishes the following paragraph:

"Considering the connection this Company has with the French Aviation Mission now in Buenos Aires, so fully directed by Lieut. Colonel Prédorin there is no doubt that shortly there will be inaugurated, under the most favorable auspices, lines of communication between the Capital and the Argentine Provinces, and that various routes laid out in the territory of the Republic will be of the utmost service and such a service as cannot be over-rated."

A GERMAN MISSION FOR ARGENTINA.

"La Union" (the pro-German paper) under date of October 27th announced that a cable had been received heralding the arrival shortly of a German Commercial Aviation Mission to Argentina.

Like Great Britain, France, Italy, the United States and others, Germany sends this mission to demonstrate excellency of machines and efficiency of aviators. The article also stated that a number of German aviators already in Argentina would join the mission on its arrival. Furthermore the mission will establish headquarters at Palomar.

AMERICAN AVIATOR IN ARGENTINA.

While Italy, France and Great Britain have sent out official missions to Argentina, so far the United States has given no sign. French, British and Italian machines are familiar to Argentina but the marvels of American industry and genius---which took such a prominent part in winning the war in the air-----are unknown here.

Were it not for private enterprise, no doubt this state of affairs would continue indefinitely.

The American aviator, Lawrence Leon, representative of the Curtiss company here, is the only tangible indication that the United States is aware of the fact that Argentina offers one of the most splendid fields for development of aviation in the world.

In "La Prensa" of October 27, 1919 the following paragraphs were published concerning Mr. Leon's activities:

"A new element of progress has been incorporated since yesterday to aviation in our country. We refer to the aviator Lawrence Leon, representative of the Curtiss firm, who, according to plan previously outlined, has initiated his aerial activities at Palomar, making a trial trip in one of the machines he has brought with him.

The characteristics of these machines---which will be used for instruction purposes in the school shortly to be founded by Mr. Leon-----are as follows: length of planes 13.29 meters; length of aeroplane 8.33; weight without combustible, 693 kilos; with combustible 915 kilos.

These machines are run by OX Curtiss motors of 90 HP, eight cylinders, and consume 250 grams per H.P. per hour.

Of the four aeroplanes which the Curtiss company has sent the aviator Leon, one has already been assembled at Palomar, and Leon made a trial trip yesterday. He rose with great facility, flew for about 20 minutes, and descended with absolute correctness."

A few days later Mr. Leon made a trip to Montevideo, with a 90 H.P. Curtiss biplane. The trip was successfully accomplished under very adverse weather conditions, thereby demonstrating the excellence of machine and efficiency of pilot.

BRITISH AVIATORS IN ARGENTINA.

Major Kingsley of the British Army, Director of the "River Plate Aviation Co." (see my report No. 1315) has made many flights in Argentina and achieved remarkable popularity. He has made 11 flights to Montevideo and return, and thus covered 3800 kilometers in his various crossings of the River Plate.

He has also flown to Bahia Blanca (Prov. of Buenos Aires), to Rosario, Gualaquay, Campana, Lomas, Cordoba, San Juan, etc. and in the Republic of Uruguay flew from Montevideo, to Colonia, Fray Bentos, Mercedes, Paysandu and Salto without landing until he reached Palmar in Argentina, and carried two passengers.

The total distance covered by Major Kingsley to date (Nov. 4, 1919) without counting aerodrome flights----is about 10,000 kilometers.

The latest addition to aviation activities in Argentina is the Handley Page British Expedition, Lieut. Hussey and a Mr. Hinds are the chief members of this mission. (see Report No. 1315, 3rd paragraph.)

The personnel of the mission, now on the way out to this country, is composed of 6 officers and 20 mechanics, all being men demobilized from the British Royal Air Force.

The Mission brings all that is required for the moment. Chief equipment as follows: aeroplanes of various models, hangars, spare parts, and everything necessary to equip an up-to-date flying school. The Argentine Government has granted the use of the ground at Palmar for the time being where they will set up hangars, and put together the machines.

A complete outline of the programme of Handley Page's Mission is given in the clipping attached hereto taken from the "Buenos Aires Herald" of November 12, 1919.

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SUBJECT REPORT ON AIRPLANES IN LATIN-AMERICA.

From OA.

No. 155. Date Nov. 24, 1919.

Replying to No. Date DEC 29 1919

I am informed on reliable authority that C.M. Webster, Latin-American sales-manager for the Curtiss airplane people, intended to sail from New York in July with two pilots, two mechanics, six JN-4-D planes and spares, and intended to have four more machines of a newer type, both land and water, shipped after him. At Rio de Janeiro he intended to land one pilot, one mechanic and two JN planes. At Buenos Aires he and the rest of the men and material expected to remain. He intended to have one new type, Model F, Curtiss 150 H.P. plane sent to Rio.

Webster claims a government deal involving the purchase of a large number of JN machines had been closed and that he can now deliver this type at various prices, depending on the use to be made of them. The price quoted for a used JN was \$2500 to \$4500 (\$4500 being for planes with not over 25 hours service). The new JN will cost \$5500. Used OX-5 motors \$750 to \$1500; new \$2500. All these prices f.o.b. piers New York. Standard machines, new, in which OX-5 motors are used in place of the Hall-Scott motors, \$4000 f.o.b. piers New York.

He wishes to push in South America a high altitude Oriole, 150 h.p. Curtiss motor, either instruction in dual control, or passenger, two in front cockpit and one pilot in rear, or mail. For latter he would remove passenger seat in front, allowing about 400 pounds mail. Speed 95 to 100 miles per hour. Fuel 67 hours flying. Nine in use in Denver and two being shipped to Bolivia for an altitude of 10,000 to 12,000 feet. Price \$9000 f.o.b. piers New York. The Oriole is also quoted with OX-5 motor for three people with a speed of about 85 miles per hour, at \$7500.

No.155. Page 2.

Another model recommended for South America is Model 18-B; two-place fighting machine; 12-cylinder 400 H.P. Curtiss motor; pilot and gunner; four machine guns, ammunition and fuel to fly at least two hours at 163 miles per hour with full load. This handles as easily as the JN with a wonderful climb. Recently made the first 16,000 feet in ten minutes. Has a ceiling around 30,000 feet. It is a wonderful fighting machine or could be converted into a mail machine by eliminating the military equipment and replacing by gasoline. Price \$25,000 f.o.b. piers New York.

AMERICAN EMBASSY
OFFICE OF THE MILITARY ATTACHE
BRUSSELS, BELGIUM

2076-24
WAR DEPARTMENT

January 24, 1920.

CONFIDENTIAL.

From: Military Attaché, Brussels, Belgium.
To: Director of Military Intelligence, Washington, D. C.
Subject: Air instructors for the Argentine Army.

1. In a conversation with Lt.-Colonel Luis Jorge Garcia, Military Attaché of the Argentine Republic to Great Britain and Belgium, Colonel Garcia informed me that his Government had recently requested the British Government to send an Air Mission to the Argentine. This request was refused by the British on account of the expense involved.
2. Colonel Garcia informed me confidentially that he much regretted that his Government was unable to secure this Air Mission, for, failing to secure a British Mission, he felt that they were apt to apply to Germany, and he felt sure that Germany would not refuse to furnish suitable instructors - in fact, everything desired by his Government.
3. He also stated that there was a strong undercurrent in the Argentine Army to free itself from German influence. During the war the Army, on account of its long association with German officer instructors was at least in part pro-German, but that the better element of the Army is now anxious to free itself from that influence.
4. His impression of the course his Government might pursue in reference to instructors is based upon their previous experience. It seems that a number of years ago the Argentine Government applied to France for instructors for their army. Failing to secure them, they applied to Germany, where they were successful - in fact so successful that the Argentine Army was, during the war, largely under German influence.

JOHN R. THOMAS, Jr.,
Colonel, Infantry,
Military Attaché, Belgium.

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2076-25
WAR DEPARTMENT

SUBJECT Aviation Notes-----Argentina

From R.C.-----ECONOMIC

No. 1905 Date January 23, 1920

Replying to No. Date, 19

25. Air

Resumé of Report.

Foreign aviators in Argentina are actively engaged in laying solid foundation for future business.

Major Kingsley, director of the River Plate Aviation Company, and the French Commercial Aeronautic Mission have leased land together for establishment of aerodrome, aviation school and hangars.

The Italo-Argentine Co. has obtained the free use of a piece of land belonging to a prominent Argentine landowner for establishment of aerodrome.

Argentine Aero Club is making efforts to establish permanent air services.

Argentine police are not blind to advantages of aviation for country districts.

After a period of what might be called "theoretical and practical demonstrations" the foreign aviators in Argentina, most of them representatives of commercial concerns, have settled down to work, and are laying a solid foundation for future business operations.

Thus, the River Plate Aviation Co., directed by Major Kingsley and the French Commercial Aeronautic Mission have joined forces to lease land near Buenos Aires and build a model aerodrome. However, these companies have not pooled interests, and apart from occupying the same aerodrome, will work as separate concerns.

The land leased is in a suburb of Buenos Aires, San Isidro, (about 20 kilometers from the capital) is about 200 meters square and about two kilometers from a railway station.

A model aerodrome will be built and an aviation school established. Besides, the field will be used as a station for passenger service.

The Italo-Argentine Company has been fortunate enough to obtain the free use of a piece of land belonging to Sr. Florencio Martinez de Hoz, a wealthy Argentine landowner. This land is situated in Lanús, 7 kilometers from the capital, two blocks from the railroad station and faces a paved street.

The capital of the Italo Argentine company was subscribed by Italian residents in Argentina and by some Argentines, and it is intended to bring out a number of machines manufactured in Italy.

The aerodrome will be under the direction of an Argentine pilot, who was a lieutenant in the Italian Army during the World War. The other members of the staff were previously

Blinding Margin

with the official Italian Aviation Mission to Argentina.

It is reported that about 10 machines are at Genoa, ready for shipment to Argentina. These are of the S.V.A., Aviatik, Balilla Farman-Savoia, and a new type of S.V.A. manufactured by the Gio Ansaldo Co.

The capital of the Italo-Argentine Co. will be used to support school and for care of material as the cost of the machines has been met by the factories themselves and the Italian Government.

To a certain extent the school proposes to demonstrate the advantages of Italian machines, and will hold exhibitions for the purpose.

The activities of the establishment will also include a liason with a similar school in Rio Janeiro, Brazil and the Italo-Argentine Co. hopes to start the first regular aerial line between Buenos Aires-Rio Grande and Rio Janeiro.

The Argentine Aero Club is making considerable efforts to encourage civilian aviation, which, up to the present, has only been indulged in by a nucleus of enthusiasts.

The President of the Club is working hard to make possible establishment of regular aerial lines between Buenos Aires and Montevideo, Cordoba and Mendoza.

The Argentine Chief of Police has approved a project outlining an aerial police service for the rural districts. This project has now been sent to the Ministry of the Interior, and the opportunity is being awaited to request funds from Congress to put it into effect.

It is proposed to utilise the services of aerial police to pursue cattle thieves, to transport officials, to guard railroad lines in times of strikes, to transmit urgent orders, arrest criminals, etc.

To start this service three or four aeroplanes are considered sufficient, total cost not to exceed \$50,000 m.n.

3
2076-26
WAR DEPARTMENT

SUBJECT... Aviation notes-----Argentina.

From... R.C. -----ECONOMIC

No. 1936 Date February 27, 1920

Replying to No. Date 19

25. Air

APR 6 1920

RESUME OF REPORT

Argentine Minister of War prohibits use of field of
Military School of Aviation for purely commercial purposes.

Special attention is invited to Boletín Militar No.1457, 2nd
Part, February 24, 1920 wherein appears a decree of the Argen-
tine Minister of War prohibiting companies established at
Military Aerodrome of El Palomar to effect flights of a
commercial character.

This decree is translated as follows:

"The Minister of War:

Orders:

1° To make known to the different companies to which authori-
zation has been conceded to establish themselves at the Mili-
tary Aerodrome of El Palomar, that they have been so establish-
ed within the express terms of a Decree dated Jan.18, 1916 ("To
encourage the development of civil and military aviation in
the Republic") and in consequence are not permitted to make
flights nor land within the limits of the Military Aviation
Field, when the purpose is to effect aerial transportation for
commercial ends, that is to say, receiving remuneration for
said services, even though these take place without the mili-
tary jurisdiction."

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NO ORIGINATOR TO ORIGINATOR

CONFIDENTIAL

1920-27

APR 30

WAR DEPARTMENT

SUBJECT Aviation Notes-----Argentina.

From R.C. -----COMBAT

No. 1947 Date March 19, 1920.

Replying to No. Date 19

76. Aerial

RESUME OF REPORT.

Departure of French Aviation Mission to Argentina.
Two Argentine military aviators cross Andes and return to Mendoza, Argentina without stop.

An Argentine naval aviator, Lieut. Zar, reaches Asuncion in a hydroplane.

Captain Zuloaga, Argentine Military Attaché in Paris, at present on leave in Buenos Aires will attempt flight over the Atlantic from Portugal to South America.

Proposition of the A.V.Roe Co. to Argentine Military Aviation School re purchase of AVRO machines and instruction of pilots and mechanics.

On February 17th the Chief of the French Aviation Mission to Argentina, Lieut. Colonel Précardin, and the majority of officers and men forming the Mission, left Buenos Aires, via Montevideo, for France. According to "La Nacion" "one of the most beautiful pages of aviation in Argentina is thus terminated. The qualities of the Mission were amply appreciated by the Argentines, who, throughout the stay of the mission here, showed sincere admiration and sympathy for their efforts. On summing up the work done by the mission, it may be affirmed that it was most successful. The Mission demonstrated the practicability of aerial transports, and also did much to bind still closer the ties of friendship between Argentina and France".

As reported in No. 1815, the object of the mission was to effect exhibition flights and show safety of aerial transportation as an ordinary means of communication. Spectacular flights did not enter largely into its programme-----contrary to the policy of the Italian Mission which preceded it in Argentina. Nevertheless, Lieut. Prieur's flight to Chile was of a spectacular nature, though it did not rival that of Locatelli of the Italian Mission.

Argentine military circles in particular and public opinion in general showed the greatest satisfaction and pride in the achievement of Captain Antonio Parodi who flew from Mendoza over the Andes to Santiago, Chile and returned without stop.

This feat took place on March 9th and Captain Zanni emulated the same flight on March 16th with equal success.

According to "The Standard", the mere fact that other flyers have done the trick, and that recently, does not detract in the

least from the magnificent feat which the Argentine officers have placed to their and their country's credit." "La Prensa" states that "after George Newbery conceived the idea of flying over the Cordillera this has been a permanent obsession of the Argentine pilots. Up to the present only one Argentine military aviator performed the feat, Lieut. Candelaria, but this was done over the Southern Andes, where the mountain peaks are much lower."

Both Captains Parodi and Zanni attempted the flight some time ago, but were unsuccessful due to inadequate machines. However, once the Italian machines were incorporated into the Palomar fleet, various military aviators had the ambition to cross the Andes. Finally Captains Parodi and Zanni were designated, and obtained the authorization of the Ministry of War.

About a month ago, Captain Almandos Almonacid (an Argentine member of the French Mission) with a French machine endeavored to make the flight, but due to a series of accidents was unable to carry out his purpose. He claimed that he had been the victim of sabotage, etc., but the investigation never gave any definite results.

Captain Parodi left Mendoza at 6 a.m. and returned at 10.15 a.m. making a non-stop trip.

Captain Zanni left at 6 a.m. in the same machine 7 days later and returned to Mendoza at 9.35 a.m. also making a non-stop trip.

In Argentine circles it is said that the Chilians are far from delighted at the performance, and did not feel extraordinarily gratified at the clever way Capt. Zanni dropped the mail bags at exactly the places indicated.....

On the same day as Captain Zanni effected his flight to Chile, Lieuts. Zar and Pouchan of the Argentine Naval Aviation Corps, left the station at San Fernando intending to fly in hydroplanes to Asunción, Paraguay. Lieut. Zar reached his destination in eight hours and 10 minutes, covering a distance of 1300 kilometers and making three stops. Lieut. Pouchan on descending at La Paz (province of Entre Rios) discovered that his boat had sprung a leak, and was thus unable to continue the trip.

Thus Argentine aviators hold the record for South America for all flights.

Captain Angel Zuloaga, another well-known Argentine aviator who, it will be remembered was the first to cross the Andes via the air, (in a balloon with a Mr. Bradley-----see Report No. 873, dated May 30, 1917) intends to attempt crossing the Atlantic shortly.

Captain Zuloaga is at present Argentine Military Attaché in Paris, and is on leave in Buenos Aires.

He has presented his plans to the Ministry of War, and is awaiting requisite permission to sail for Europe and complete preparations.

Captain Zuloaga will use a specially built Ansaldo machine S.V.A. 500 H.P. which the company will present to him to make the trip. His plans were approved as practicable by the Ansaldo Co. in Italy and the Argentine Meteorological Bureau has also taken an active part in assisting towards success of the venture. Diagrams of winds over the ocean at a height of 1000 meters are being especially prepared for the aviator. Also a diagram showing magnetic inclination for the whole year.

A Committee formed by several aviation experts, including the

Director of the Argentine Military Aviation School, is studying a proposition presented by Major Scott of the British Army, representative of the A.V.Roe Co. of Manchester, England.

The proposition is that the Argentine Government purchase 6 biplanes AVRO 110 H.P. cost of which will be \$15,000 m.n. each to be used for instruction of military pilots.

The proposition adds that the students will be instructed by the members of the mission in accordance with the Gosport system, universally recognized as one of the best.

The Government will undertake to pay \$1,500 m.n. for each pupil for the complete aviation course, and this will be the total cost of each aviator to the country. If the Government desires that these aviators in their turn be trained as instructors, then \$300 m.n. additional fees will be charged.

The Government will also pay the salaries of four expert mechanics at \$400 m.n. each, and will see that 10 mechanics are available for instruction by the experts of the mission.

All the personnel of instructors and mechanics will be under the orders of the Director of the Military Aviation School.

It is understood unofficially that this proposition will be accepted by the Argentine Government. Its advantages are manifest as after eight years the Argentine Army has only 20 available military aviation pilots, most of whom can only fly machines of an obsolete type. These pilots have cost the Government \$15,000 m.n. each.

CO 2276-23
MAY 31 1920

REC'D, M. I. R. O. O. O. MAY 19 1920

SUBJECT Franco-Argentine Aerial Transportation Co.

From R.C. ----- ECONOMIC

No. 1963 Date March 24, 19 20

Replying to No. ----- Date -----, 19

25. Air. RESUME OF REPORT

Information is given re nature and scope of the business of company; types of airplanes and motors used; routes and landing fields, rates of transportation; numbers of pilots and mechanics, qualifications and pay.

Reference to 1st Ind. O.D.A.S. Washington, Dec. 4, 1919. the following information concerning the Franco-Argentine Aerial Transportation Co. is forwarded:

a) Nature and scope of the business:

Limited liability company the name of which is the "Compañia Franco-Argentina de Transportes Aereos." \$400,000 paper capital subscribed up to the present. Board of Directors composed at present by:
B. Sauberan President (French)
M. Quintana Vice-President (Argentine)
Dr. Leguizamon "
S. Guthman (French)
G. Artaux "
R. Bernard "
F. Hentsch "

Its objects are aerial transportation in all its forms and an aviation school.

b) Types of airplanes and motors used:

Biplanes... 3 Breguet limousine, 3 passengers seats, plus pilot and mechanic, two 275 HP Lorraine engine.
1 Caudron G 3, Anzani 100 HP for school practice.

c) Routes and landing fields:

The routes are all over the Republic in a radius of 500 kilometers from Buenos Aires.
Landing field at San Isidro next to the Golf Club, in half account with the River Plate Aviation Co. (Major Kingsley. The landing field is 700 meters by 680 absolutely flat and very high ground. Proximity to the electric railway to Tigre and near a paved road.

d) Rates of transportation.

Present rate is one paper peso per kilometer for Breguet machines and one and a half for Farman.

e) Numbers of pilots and mechanics, their qualifications and pay.

Besides the general staff: 6 pilots (ex war pilots) at

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\$900 m.n. per month; 6 first mechanics (ex war mechanics)
at \$450 m/n per month and 6 second mechanics (of the country
at \$250 m.n. per month.

FOR OFFICIAL USE ONLY

1920

WAR DEPARTMENT

SUBJECT Changes in Argentine Air Service. REC'D, M. I. R. O. C. S. MAY 10 1920

From R.C. -----COMBAT

No. 1264 Date March 25 19 20

Replying to No. ----- Date ----- 19

6. Efficiency.

RESULT OF REPORT.

Colonel Enrique Mosconi has been appointed Inspector of the Aeronautical Service of the Army, and Major Jorge B. Crespo, Director of the Military Aviation School.

According to a newspaper article the "Inspection of the Aeronautical Service of the Army" will exercise the higher control of all military aerial activities, and will probably extend radius of action to civilian aviation also.

The appointment of the new director of the Military Aviation school is also commented upon favorably, and it is hinted that the former director left much to be desired inasmuch as the performance of his duties was concerned.

With reference to R.C.'s Report #1887 in reply to Circular Letter No. 70 ---2083-54(M.I.2) the following change is reported in connection with Air Service in Argentina.

By a decree of the Executive Power (which appeared in Boletín Militar No. 5548, 1st Part, dated March 16, 1920) Colonel Enrique Mosconi was appointed Inspector of the Aeronautical Service of the Army, and Major Jorge B. Crespo was appointed Director of the Military Aviation School.

Concerning these changes in the Air Services the following statements were made in "La Union" on March 8, 1920---the decree of the Executive Power had not yet appeared at that time:

"In having decided to make these praiseworthy innovations, the Government has taken into account the lamentable state of military aviation, its constant loss of prestige and absolute neglect of same---which might have been overcome by changing the Director-----and has recognised the necessity of creating an inspection of the service. This inspection will not only supervise the development of the new arm, but will also guide this development on the basis of scientific and modern standards, without losing sight of military utility, as this is the nature of the only official air institution.

The Inspection of the Aeronautical Service will be called upon to take an active interest in aviation of whatever nature within the territory of the Republic, in accordance with a criterion which will be outlined later by regulations which will be the object of the most careful study.

The Inspection of the Aeronautical Service will be under the General Direction of Engineers (headed by General Rodriguez) which in its turn depends from the Ministry of War. The Military Aviation School will be directly under the Inspection of the Aeronautical Service.

The Inspection of the Aeronautical Service will also have to undertake at the earliest possible opportunity the study of new laws regarding aviation, in order to guarantee methodical progress of same.

Aerial legislation should also be a subject of first importance for the new authorities, and everything should be done to encourage the creation of new fields and schools throughout the territory of the Republic, basing instruction on what has been learned from Europe.

Summarising: the Inspection of the Aeronautical Service will exercise the higher control of all military aviation activities.

Automatically it will probably extend the radius of its work to civilian aviation in which case the Argentine Aero Club would come under its jurisdiction, and would have to adjust its programme to the requirements of the Inspection of Aeronautical Service.

It is possible that the naval authorities decide to follow the example of the military ones and will create in their turn the 'Inspection of Aeronaval Service' as the naval aviation service is growing by leaps and bounds.

Colonel Enrique Mosconi, Engineers, will be designated to fill the post of Inspector. He is an army officer of prestige and intelligence, and has dedicated recent years to profound studies of aviation. He has remarkable qualities as an organizer and energetic director; these two qualities are of great importance for his future work.

Major Jorge B. Crespo, who was recently Military Attaché to the Argentine Legation in Rio Janeiro, will be designated to take Lieut. Colonel Obligado's place as Director of the Military Aviation School.

Major Crespo is a young officer who is said to be exceptionally well read in scientific matters. A little while ago he published a book on the Military Power of Brazil. "

The following data was obtained from the Army Register:

Colonel Enrique Mosconi was born in 1877, entered the service in May 1891, and his last promotion was on December 31, 1917.

Major Jorge B. Crespo was born in August 1861, entered the service in May 1897, and his last promotion was on December 31, 1918.

Lieut. Colonel Alejandro Obligado, the previous director of the Military Aviation School, was relieved on date of appointment of new director. Although no official statement was made to the effect, it is understood that his relief was due to inefficient performance of duties as Director of the Aviation School.

1920

JUN 15

WAR DEPARTMENT

SUBJECT Aviation Notes----- Argentina.

From R.C. -----COMBAT

No. 2016 Date May 10, 1920

Replying to No. Date, 19

23. Strength
70. Aerial

JUN 15 1920

RESUME OF REPORT

The Ministry of War issues statement dealing with Captain Zuloaga's application for permission to attempt flight across the Atlantic, unfavorable to same.

Gift of Belgian Government to Argentine Aviation School.

Three members of staff of Aviation School ordered back from Europe.

The Ministry of War issued a statement on May 3rd, dealing with Captain Angel Zuloaga's application for permission to attempt a flight across the Atlantic from Lisbon via St. Vincent to Pernambuco and thence overland to Rio de Janeiro and Buenos Aires, a distance of 4,080 kilometers over water and 8,570 kilometers over land.

It is pointed out that in the first place the aviator would require to have an aeroplane which has undergone practical tests, and that Captain Alcock's flight across the north Atlantic cannot be regarded as having demonstrated the practicability of Captain Zuloaga's proposal. The logical thing would be to attempt the flight with a hydroplane, but Captain Zuloaga proposes to use an aeroplane, and in order to give the aviator a reasonable measure of security and protection, there would have to be two chains of transports, one from Lisbon to Saint Vincent, and the other from St. Vincent to Pernambuco. Reckoning up the cost of fuel, wages and other outlays, the total cost would not be less than \$1,000,000 "an expenditure", it is added, "which would be disproportionate to the end to be attained, as even if the effort were successful, it would merely prove the excellence of foreign material, and the skill and endurance of an Argentine aviator, which no one holds in doubt."

(In the above connection see Report 1947, page 2).

2876-27

The Argentine Ministry of Foreign Affairs received a cable on April 29th, 1920 from the Argentine Minister in Brussels, stating that thanks to the efforts made by the military attaché, Commander Garcia, the Belgian Government had presented to that of Argentina some valuable aviation materiel.

The materiel comprises the following:

6 Anzani motors of 100 H.P. and accessories:
6 Mercedes " " 200 "
10 Gnome " " 80 "
20 propellers for Anzani motors, and
20 " " Mercedes "

Besides the foregoing, the gift comprises a large collection of aeronautical implements, all of which will be added to the stock of the Argentine Military Aviation School.

(In connection with the above, see Report # 1804)

On April 15th, 1920 the Ministry of War issued an order to the effect that Captain Anibal Brihuega, Engineer Edmundo Lucius and the mechanic, Ambrosio Taravella, members of the Military Aviation School, at present in Europe all return to Argentina.

Captain Brihuega has been in Europe, commissioned by the Argentine Government, for over four years, as also the mechanic Taravella. It is stated that their reports have been few and far between. Both were sent to Europe to study machines and motors in England, France and Italy.

Engineer Lucius was sent to Europe only a few months ago, and was commissioned to visit factories in England and France.

NOTE: All the above items are translations from "La Nacion" and "La Prensa" Buenos Aires, Argentina. Conservative and reliable.

Binding Margin

1920 76-33
SUBJECT Aviation Notes-----Argentina-----

From R.C.-----ECONOMIC-----

No. 2061-----Date-----June 28, 1920-----, 12

Replying to No.-----Date-----, 19

RESUME OF REPORT AUG 19 1920

Information from London is to the effect that the Handley Page Co. has made a gift of two aeroplanes to the Argentine Military Aviation School.

The Budget of the War Department for this year will permit the purchase of several new machines. The special committee designated to decide type of machines has specified Avro and Curtiss as most suitable.

German Civilian Aviation Mission to arrive next summer.

(21) Organization.

(62) Equipage.

The Military Attaché to the Argentine Legation in London has communicated to the Ministry of War that the Handley Page Co. has donated two aeroplanes to the Military Aviation School.

The Ministry of War has accepted the gift with thanks.

(Source: "La Razón" June 23, 1920).

Once the Senate and Chamber of Deputies have taken final action on the Budget for the current year, the Ministry of War will be in a position to purchase various machines.

The special committee appointed to decide what type of aeroplane should be purchased has designated the Avro and Curtiss as most suitable for training purposes. The authorities have therefore decided on purchase of 8 Avros of 110 H.P. and 8 Curtiss of 90 H.P.

(Source: "La Nación" June 24, 1920)

Lawrence Leon, the sales representative in Argentina of the Curtiss company, in the course of a visit to the office of the Military Attaché stated that the contracts have been drawn up and parties interested are only waiting for money to be forthcoming to complete the transaction and sign. Ten Curtiss training planes have been ordered from the United States.

(41) Personnel. d) Foreign Missions.

On being interviewed by a representative of "La Razón" on June 30th, 1920, a German aviator, Max Holtzem, made the following statements:

"It is true that the German airship building firms will send civilian missions to Argentina and other South American countries well provided with machines and accessories, and the personnel necessary. The object will be to establish aerial transportation lines, sell machines and start training schools. This can only be commenced after July 10th, 1920 in accordance with the provisions of the Peace Treaty.

The belief that Germany is not in a position to build machines is quite erroneous. The German manufacturers are working at almost normal pressure, and have even been able to sell machines to the United States.

A certain factory is building a new type of machine specially designed to meet the needs of transportation on this continent in accordance with a study made. This machine will have wings, motor, etc. of aluminium. It will also have two motors, which can be repaired whilst the machine is in the air if necessary, and in spite of carrying six passengers and two pilots. The machine will furthermore be able to transport 900 kilos of cargo as well as medicine, coffee, rubber, tobacco, butter, cheese and any articles the passengers might wish to have carried in addition to their luggage. The apparatus may also be used as an aeroplane or hydroplane.

Another company is engaged in the construction of machines specially intended for "estancieros" (ranch-owners) 16 H.P. one-seater. Still another factory is building a machine of 165 H.P. which has the peculiarity of carrying wings which may be folded up at the sides. Yet another company is specialising in construction of machines which will be quite weather proof, and will not need to be kept in hangars.

The principal aerial transportation lines contemplated are between North America and Brazil, and from Brazil to Argentina.

A Bavarian pilot called Kneer, has already left Trieste for Argentina and is bringing with him a Fokker biplane of 160 H.P. With this machine Kneer intends to give acrobatic demonstration flights. "

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1920
2076-34
SEP 11
U.S. DEPARTMENT OF COMMERCE
BUREAU OF AIRCRAFT
WASHINGTON
SUBJECT AVIATION IN ARGENTINA

From E.C. --- ECONOMIC

No. 3001 Date July 30, 1920

Replying to No. Date, 19

(8) Transportation

(25) Air

(74) Aeroplane

RESULT OF REPORT

Notes on rules and regulations in Argentina of national municipal, or other authorities governing operation of civilian and commercial aircraft. Air routes, opportunities to sell aeroplanes for commercial and civilian purposes. Work of Curtiss Co.'s representative to date. Manufacture of aircraft in Argentina, notes on transportation, charges for same, landing fields.

The following is a resumé of a report furnished by the Consul General, Buenos Aires, Argentina on June 4th, 1920 on Aeronautics.

There are no rules or regulations in Argentina of national, municipal or other authorities, governing the operation of civilian and commercial aircraft. The government is now studying as a possible basis the rules adopted by the "Allied Aeronautical Convention" in Paris in 1919.

There is no control whatever of civilian aviation. Anyone, at present, may fly a machine.

There are no existing air routes nor any proposed for establishment within a year or at a still later date, furthermore commercial and civilian aviation receives no Governmental assistance.

No Government services, other than the military, employ aircraft.

There is a fair opportunity to sell aeroplanes for commercial and civilian purposes in this country. They cannot be sold, however, unless shipped here and seen beforehand by the purchaser. The Argentine purchaser refuses to pay half the purchase price with his order before he has seen the machine. The representative of the Curtiss Aeroplane and Motor Company has sold six machines and states that he could have sold twice as many had he had them here. The company is now operating six of its own machines here carrying passengers wherever they wish to go, and also making "joy-rides" and just about pays expenses.

Aircraft cannot be successfully manufactured in this country.

There are not facilities to manufacture motors, wires, cables, etc.

The Argentine Government has constructed, or rather put together, four army machines, but all its aircraft parts were brought from abroad.

United States firms coming here would have to meet very strong opposition from European concerns, the French, English and Italians all having had aeronautical missions here, backed by their respective Governments, and with this backing are able to do much more in the way of propaganda than American concerns would be able to do on their own resources.

The Curtiss Aeroplane and Motor Company has sent a representative here with five land machines and one biplane, and he has been able to do some very good work, but it is needless to point out that this company or any other American company would be able to compete on a more favorable basis if the American Government had sent, or would even now send, a competent aviation mission here. Up to the present, considering the obstacles it has had to work against, the Curtiss Company has done exceedingly well, and enjoys high prestige, much of which is due to the fact that although the Italian, French and British aviators here have all had a number of accidents, some of them quite serious, the Curtiss Company has not had a single one. A record like this not only redounds to the credit of the pilot, but also to that of the machine.

If it is impossible to send an aviation mission here, then the next best thing would be to send one or two large high-powered machines which would be capable of making long flights.

Charges for transportation have been agreed upon by the three companies now operating here, viz: Curtiss Co., River Plate Aviation Co. and Cia. Franco-Argentina de Transportes Aéreos as follows:

For specified trips between various cities, one peso (Argentine currency) equal to \$0.4246 (United States currency) per kilometer per person.

For "joy-rides" short flights of from ten minutes to one hour's duration four pesos (Argentine currency) or \$1.70 (U.S. cur.) per minute per person.

No rates have been fixed for freight, express or mail as these are not carried.

There are no established lines here yet, and no "through-rate" agreement with any transportation system.

A limited business is being done here in carrying passengers on short trips and pleasure flights, and as far as the Curtiss Aeroplane and Motor Company is concerned just about paying expenses. From an operational and service standpoint, the flying, so far done, may be said to have been most successful.

Mr. Lawrence Leon, the representative, has been most active, and has done much in popularizing this machine by instructing pilots for the Argentine army, making special flights and by interesting lots of prominent people in aviation by taking them on short flights. It must be remembered that this company has not the financial backing which the other companies have.

Concerning the activities of the Cia. Franco-Argentina de Transportes Aéreos, this company is active in advertising the French machines which it uses. It has no definite project as far as known of establishing regular air-lines or freight or passenger service, contenting itself with advertising the fact that it carries passengers at the rate given above.

About two months ago, Captain Guichard of the French Mission, with several other aviators separated themselves from the Compañía Franco-Argentina de Transportes Aéreos, and formed the Argentine Aviation Company with a capital of about \$40,000 U.S. currency. This company has at its disposal two Spad machines, type AR, carry-

ing three passengers each, and the Cameron machines, type G3, carrying two passengers each. This company represents the two machines as does the Cia. Franco Argentina, but does not have an aviation field of its own. Captain Guichard states that he expects to have within a short time fifteen new machines, ten Potez 50 HP two passenger machines, which will sell here for 15,000 pesos (\$2500 U.S. currency) including training, and five built Farman and Salm machines. He states, however, that there is said to be a meeting of the French aviation interests here, and he expects that his company will be re-merged with the Cia. Franco-Argentina de Transportes Aereos.

A general resumé of the River Plate Aviation company shows that it was organized principally through the initiative of Major S. Kingsley, formerly of the British Army, and Mr. H.C. Thompson, Jr. being the principal aviators. It is featuring passenger trips and short pleasure flights at the rates mentioned above. Its principal object is to popularize the de Havilland machines. Although the Aircraft Manufacturing Company, Limited would probably still maintain an agency here, the River Plate Aviation Company could not last long if it were not for the financial support of Mr. H.C. Thompson.

Concerning the activities of the Handley Page Co. it is stated that this firm is just moving into its new field at Hurlingham, and will soon be able to carry passengers at the same rate as the other companies. Its object now is purely to popularize the British machines.

(76) Landings.

There are no Government-owned landing fields here used for civilian or commercial purposes. The only Government owned field is at El Palomar about fifteen miles from Buenos Aires, and this is used purely for military purposes.

Of the four fields here, the Government field at El Palomar is not regularly available for commercial purposes or for civilians. The fields of the Curtiss company, the River Plate Aviation Company and the Handley-Page Company at San Fernando and San Isidro, respectively, are available for commercial and civilian use and for emergency use.

The Curtiss field is about fifteen miles from the center of Buenos Aires. The ground is rented by the Curtiss Company from private parties. As far as can be used at present, it is a square field 1600 feet by 1600 feet.

Conveyance of passengers can be had by automobile highway or by train. The field is not located with a view to freight conveyance as aviation has not progressed that far in Argentina.

The facilities for repair are good.

Fuel and oil are available. Important spare parts must be brought from the United States. The company does not share with any other the use of its field, nor does the company make use of any government operated landing fields. Until about two months ago it was allowed to use the Government military field at El Palomar.

The field of the Cia. Argentina de Transportes Aereos is at San Isidro, just outside of Buenos Aires, in conjunction with the River Plate Aviation Company. The field is rented from private parties. It is about 3,000 by 2,000 feet. The field is easily reached by railway or highway, it is not

placed with regard to the conveyance of freight. The facilities for repair are good. The mechanics were sent over with the French Aviation Mission, and have remained with the Franco-Argentine company. Fuel, oil and spare parts are available, but important spare parts must come from France.

The River Plate Aviation Co. leases its field in conjunction with the Cia. ^{France} Argentina de Transportes Aereos at San Isidro.

NOTE: In connection with the above report the Consul further states that it must be borne in mind that until last year commercial aviation was unknown in Argentina. The coming of the various missions, has, however, aroused a certain amount of interest. Looking at the fact that no machines are used commercially in any government service, and that it has no control whatever over civilian aviation, that no air routes are actually contemplated, and that only about a dozen machines of all kinds have been sold here, civilian aviation would not seem to have a very promising future, but it must be remembered that the country is new and rich.

Besides the mere commercial gain from the selling of American machines here, a creditable support from the United States Government of private firms in encouraging aviation could not help but have a favorable effect, politically, and would counter-balance the propaganda which the French, British and Italians are making. Although as said before, no air routes are planned, several companies, especially the Handley Page company, have at various times advertised that they will eventually start a regular service from Buenos Aires to Pernambuco, Brazil. This however, has evidently been abandoned, and the same company is now talking of starting a regular service between this city and Montevideo.

Two German aviators, Lieuts. Curt Goebel and Herman Mayenberger arrived here in March, stating that they came to study aviation conditions with the object of bringing out machines from Germany especially for postal service. Nothing more has come of this.

REC'D M.I.C. 6-1

3-1

2076-35

SUBJECT-----AVIATION-----ARGENTINA-----

From R.C.---COMBAT-----

No. 3040-----Date August 20-----, 1930.

Replying to No.-----Date-----, 19

RESUME OF REPORT

Physical conditions required for entrance into
Argentine Military Aviation School.

Plan of studies and appointment of instructors
at Argentine Military Aviation School.

Donation of two British machines to Argentine
Military Aviation School.

(19) Training(56) Individual

The Ministry of War recently issued the following
decree establishing conditions required of candidates to
enter Argentine Military Aviation School:

To be accepted the following exactions must be complied
with:

- 1° Normal sight of both eyes. Correction by glasses
not admitted.
- 2° Normal hearing, including absolutely healthy state
of the ears.
- 3° Absolutely healthy state of breathing apparatus,
of the circulation and of nervous system.
- 4° Maximum weight of 85 kilos for pilots and 75 kilos
for observers.
- 5° These conditions are independent from those demanded
for military service.

The following make the career of a military aviator absolute-
ly impossible:

- a) Organic alteration of the nervous system, trouble of
spine or brain, whatever its origin.
- b) Alterations of a central origin of the motor-sensitive
organs (touch, sight and hearing especially).
- c) Any anatomic or functional disturbance no matter how
small.
- d) Lesions of the heart. A severe selection will be made
of those having visceral or other stigmas which pre-
dispose them to sudden modifications of the circula-
tory system.
- e) Renal-sclerotic lesions, ^{or} nephritis as revealed by more
than one gram of albumin.
- f) Chronic pleuro-lung lesions.

- g) Old lesions of the lung and of the pleura.
- h) Highly developed gastro-intestinal lesions, accompanied by pthosis.

The first medical examination will be undertaken by the surgeon of the unit to which the candidate belongs, and the second by the surgeons of the Aviation School, in a board.

If the first medical examination reveals that the candidate suffers from any of the disabilities mentioned, he will be eliminated. Should said disability be temporary and he be declared cured after treatment, he will undergo another medical examination after same.

The result of the second medical examination will be reported confidentially to the Director of the Aeronautical Service of the Army.

The following is the schedule of studies at the Military Aviation School, for military aviators (for officers only) and for pilot aviators (for N.C.O's) recently published by the Argentine Military Aviation School under the new régime.

For the 1st category, the classes will last 14 months, divided into three periods as follows: preliminary instruction; 4 months: instruction to become a pilot; 4 months: application work; 6 months.

Instruction during the first period will comprise description and nomenclature of aeronautical material; aeronautical vocabulary and aerostatics; meteorology (aerology); mechanisms, motors; elements of graphic statics, aerodynamics and theory of flight; aerial navigation; military organization; armaments; study of the terrain; photography, electricity and radiotelegraphy.

Second period: Practical work flying a ship and application work.

Third period: Firing on the ground and in the air; day and night bombardment; wireless communication; reconnaissance and aerial photography; aerophotometry; tactical observation; joining artillery and infantry; aerial tactics; scout patrols; reconnaissance and bombardments.

The courses for a pilot (flyer) aviator----- reserved for N.C.O's will last 5 months of two periods and will comprise: preliminary instruction; one month, and instruction as pilot 4 months. The work done in the two periods as follows:

First period: Description and nomenclature of aeronautical material; aeronautical vocabulary; aerostatics; meteorology; mechanisms and motors; armament and study of the terrain, photographs.

Second period: Practical work piloting plane and school of application.

The following instructors were designated by the Ministry of War:

Military Organization: Major Adolfo Arana, Army.

Study of the terrain, reconnaissance and

aerial photography: Major Armando Verdaguer, Army.

Aerodynamics and theory of flight: Lieut. Ceferino Pouchan, Navy.

Aerial navigation and aerophotogrametry: Lieut. Robert Fitz Simon, Navy.

Graphic statics, electricity and radio-telegraphy:

Captain Rafael J. Macías.

Mechanisms and motors: Edmundo Lucius.

Description and nomenclature
of aerostatics, meteorology,
and tactical observation:

Captain Alberto G. Albarracín.

Armament, firing and
bombardment:

Captain Elisendo C. Pisano.

Piloting and aerial
tactics:

Captain Antonio Parodi.

(21) Organization

(62) Equipage

Information received from London, England on August 17, 1920 was to the effect that a Bristol biplane and an Avro 110 H.P. were being sent as a present to the Argentine Military Aviation School by the Handley-Page Co.

RECEIVED U.S. SEP 25 1920

NO OBJECTION TO PUBLICATION
IN THE JOURNALS.

OFFICE OF THE
MIL. INTELL. DIV.

3-1
1920 2076-37

DEC 22 1920

WAR DEPARTMENT

SUBJECT AVIATION NOTES

From R.C.-----COMPAT

No. 3115

Date November 12, 1920.

Replying to No.

Date 19

REC'D M.I.D., G.S. DEC 22 1920

RESUME OF REPORT

Flotilla of aeroplanes took part in manoeuvres at Marcos Paz (Province of Buenos Aires) and cooperate in firing exercises of the 2nd Regiment of Artillery. Wireless messages were also transmitted from the air.

Two Argentine officers, Captains Torres and Zuloaga, initiate movement to donate three flotillas of aeroplanes to the Argentine Military Aviation School, by public subscription.

German ex-Army pilot giving wireless aerial lectures at Argentine Military Aviation School by contract of Argentine Government.

On October 12th a flotilla of aeroplanes left the Military Aviation School at Palomar for Marcos Paz (Province of Buenos Aires) to take part in the firing exercises of the 2nd Regiment of Artillery.

This flotilla consisted of 1 Avro biplane, and 4 Caudron biplanes---the latter built at the school. These four biplanes were piloted by noncommissioned officers and they took four students of the present aviation course, as observers.

Two of the Caudron biplanes had wireless to transmit messages from the air. These wireless messages were successfully transmitted and received.

The flotilla was trained by Captain J.C. Ferreyra.

Besides the five planes mentioned, a camion of the School was also sent along taking a complete wireless outfit and operators to receive the communications from the air.

Captains Francisco S. Torres and Angel M. Zuloaga are the initiators of a movement to donate three flotillas of aeroplanes to the Argentine Military Aviation School by public subscription.

The School at present is almost totally bereft of adequate machines for any operations outside the aerodrome.

With the exception of two S.V.A. one Nieuport and two Spad, all the machines possessed by the school are for training purposes only. This has necessarily reduced the aeronautical services of the Army to instruction work alone.

The new purchases to be made by the School (See Report #3114) make no provision except for training planes.

Thus a vast increase of propaganda and publicity has been outlined to obtain subscriptions from the public to purchase aeroplanes for the Army. The idea is to organize competitions, festivals, strike medals, issue badges, paint posters, etc. to popularize the idea. The aeroplanes, flotillas and hangars will be named after the entities, institutions or persons who have most distinguished themselves in obtaining subscriptions. The funds collected will be devoted to the purchase of various flotillas of modern military aircraft with all equipment necessary. Two or more aeronautical stations will be built, with all necessary hangars, workshops, etc.

Civilian aviation will be encouraged in every way possible, and this branch of aviation is considered as one of fundamental importance in preparing aviators for later or military purposes.

On October 25th the German pilot Hannecke initiated his activities at the Military Aviation School. He was contracted by the Argentine Government to give lectures in wireless aerial subjects in view of his great merit and capacity as demonstrated in his trips over London and Paris with Zeppelins.

Hannecke has also driven Gothas and Fricshieffen. At the Argentine Military Aviation School he will use a Caudron.

N.N.I. 87.

CONFIDENTIAL

Section: Op-16-0

NAVY DEPARTMENT
OFFICE OF NAVAL INTELLIGENCE
WASHINGTON (Date:)

DEO:NEM

No.

TO President Naval War College.
General Board.
Operations (Capt. Freeman).
Navigation (Comdr. McGain).
Military Intelligence Division.
Operations (Aviation).
Source: Naval Attache, Buenos Aires.
Subject: Naval Aviation - Argentina.

March 19, 1921.

1921

2076-38

WAR DEPARTMENT

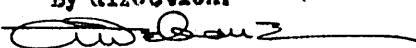
MAR 22

34X

A copy of the above report is herewith enclosed
for your information.

QA. T. LONG,
Rear Admiral, U.S.N.
DIRECTOR OF NAVAL INTELLIGENCE.

By direction.


A. DeCarre,
Captain, U.S.N.C.

RECEIVED

1921 MAR 22 10 10 27

RECEIVED

NAVAL AVIATION - ARGENTINA.

321 2076-38

WAR DEPARTMENT

The following statement was given the Buenos Aires press by the Ministry of Marine relative to the establishment of the Naval Aviation School, and the development of naval aviation - now in embryonic stage in Argentina. It will be remembered from previous reports that 1,500,000 pesos (about \$ 500,000 U.S. at present rate of exchange) has been appropriated by Congress for the Naval Aviation School, and it is confidently expected that another 1,500,000 will be added to this by the next Congress.

"When in 1919 the officers sent in 1917 to the United States to specialize in Naval Aviation and thence to Europe to perfect themselves returned to this country, a Division of Naval Aviation was established under the Office of the Secretary General. At this time there was an entire lack of proper equipment. Soon afterwards the Italian government gave us four Macchi hydroaeroplanes, a hangar, and a complete set of spare parts. With these we undertook preliminary work to bring before the public and before the Navy the necessity of this new arm. This work has been convincingly done, the capacity of our personnel demonstrated, the great necessity of hydroaeroplanes shown for the increase in efficiency of fire of ships, and the possibility recognized of long reconnaissance and exploration flights.

"After this practical work, the authorities turned their attention to the establishment of the preparatory school, and began the necessary investigation of sites. This was an arduous task, due to bad conditions along our coasts, and on our rivers, inasmuch as smooth water and communications with renewal centers are required. Various sites that at first glance seemed to fulfil these conditions were studied with the result that they were rejected for present needs. These were: Puerto Militar, the New Port of Mar del Plata, Laguna Mar Chiquita, Fuerte Barragan, the coast near Dock Sur (Buenos Aires), Martin Garcia Island, the coast near the New Port of Buenos Aires, and thence to the Delta of the Parana. After many soundings and much study for wind and weather conditions, and after consultation with the Ministries of Navy and of Public Works, the commission decided upon the coast between San Isidro Point and the mouth of the river Lujan as having superior advantages over all other locations.

"Several days ago, a writ of expropriation was secured for a location in this area, and the expropriation has already been carried out. This area is 120,000 square meters, and is 4 meters above low water.

"In addition to filling in to a level certainly above that of the highest high waters, dredging will be done in order to obtain 6 feet at low water. Bids for dredging and filling in were opened on December 17th, 1920, and it is expected that this work will require 6 months.

"In planning the School, the most modern features of the most advanced countries have been used. In the plan now published are: hangars, erecting and repair shops, lodgings for officers and men, apprentices' school, offices and administrative accessories for the functioning of the field and the School. The School of Naval Aviation is for the training of officers and men as pilots and mechanics for hydroplanes and for machine shops. With the naval officers already trained and with those recently graduated from North American Schools and with the engineers that mechanics of the Fleet now specializing abroad, it is assured that the School can get underway as soon as the School is erected. At the present time the Naval Aviation Division is calling for bids for hydroavions (school planes) and preparing the complement of machinists for the shops.

"The future School of Naval Aviation will follow the organization and methods of those countries that are experienced, avoiding thus the period of experimentation inherent in a new organization. On this basis, it is the duty of the government to guard its development and require the new service to live up to the axiom enunciated by the Chief of Staff of the British Air Forces: "The efficiency of a flying service depends primarily upon the personnel and its morals and discipline, with the professional knowledge; and lastly, in order that these may exist, upon comfort and contentment".

"It will be necessary to organize flying bases along our coast. These bases will serve the Navy, and at the same time will be centers of support for lines of commercial aviation. The benefits to our Patagonian coast will be incalculable.

"The studies of the Naval School will be many. Here, for instance, are some of the services given by flying forces during the recent war:

"Attacking ships and submarines at sea; bombardment of bases; combat with enemy's air forces; escorting convoys of

merchant ships as protective forces against surface vessels and submarines; in cooperation with men of war in attacking enemy's ships and coastal batteries; locating mine fields and destroying them; photographing ports, fortifications, etc; launching of planes from decks of ships for "Spotting".

Source: Naval Attache, Buenos Aires.
Jan. 8, 1921.

MONOGRAPH REPORT

2276-42 MAY 10

SUBJECT AVIATION NOTES-----ARGENTINA

From ARGENTINA

No. 2242 Date March 30, 1921

Replying to No. Date RECD M.C.O.G.S. MAY 16 1921 19

(Add)

(14) Composition
(42) 1st Line.

The course for pilots is nearly over for the present term, and in April the Army will have 40 additional pilots and 10 instructors, who will immediately take up work to carry out application of training received.

It is reported that plans are being made in connection with application work, to effect very important flights for distance, height and reconnaissance, and it is said that some of these will be even more important than the recent flight to Rio Janeiro accomplished by Argentine and Brazilian civilian aviators, respectively.

(31) Organization
(62) Equipage

The following machines were recently added to the equipment possessed by the Military School of Aviation:

15 S.V.A.	(Scouting)	machines
10 Avro	(Training)	"
10 Bristol	(Scouting)	"

The purchase is also reported of 5 biplanes probably

Nieuport 165 H.P. and
Spad of 180 and 220 H.P.

Argentine
Don't place aerial stations through out Country.

(Add)

(15) Organization
(44) Peace

A plan has been drawn up by the Director of Aeronautics to establish aerial stations all over the Argentine Republic. The plan is based on donations of ground which are expected from national and provincial authorities as well as from private individuals.

The project provides for *seven Principal Stations*
~~Principal Stations:~~ *nine first class stations,*

El Ralmar,
Monte Caseros,
Salta,
Córdoba,
Neuquen
Puerto Gallegos

fourty-two second class stations and 126 Civilian stations

Quote from text
Page 2

9. 1st Class stations:

Concordia
Corrientes
Santa Fe
La Plata
Tucuman
Rafina
Rio Colorado
Camelone Fierabriva
Puerto Morchi

22. 2nd Class stations:

Enrique Garbó
Santo Tomé
Paraná
Resistencia
Rosario
Santiago del Estero
Catamarca
Junín
San Luis
Bolívar
Choele-Choele
Zapala
Bariloche
Azul
Bahía Blanca
San Antonio
Trelew
San Julian
La Plata
Mar del Plata
Cañada de Gomez
La Rioja

126 Auxiliary stations:

Delta, Ibicuy, Gualeguaychú, C. del Uruguay, Rosario de Tala, Villaguay, Nogoya, Victoria, Crespo, Diamante, La Paz, Curuzú-Cuatia, Coya, Mercedes, Saladas, Paso de los Libres, Apóstoles, Posadas, Formosa, Zárate, San Pedro, San Nicolás, Casilda, Armstrong, Firmat, Esperanza, Rafaela, San Justo, San Cristobal, Crespo, Vera, Reconquista, Desvío 340, Puerto Florentino, Charaday, Huinca Renancó, Mackenna, La Carlota, Sampacho, Rio IV, Bell Ville, Villa María, Rio II, San Francisco, Jesús María, Cruz del Eje, Deán Funes, Serrezuela, Pinto, Carza, La Banda, Recreo, Lavalle, Frías, Andalgalá, Alberdi, Concepción, Monteros, Rosario de la Frontera, Cerrillos, Jujuy, Santa Rosa de Patquia, Tello, Jachal, San Juan, Retamito, Bermejo, Uspallata, Luján, Santa Rosa, Melocotón, San Rafael, Pampa de Tigre, Alto Pencooso, Villa Mercedes, Rawson, Lincoln, Bragado, Nueve de Julio, Timote, Trenque Lauquen, Asturias, 25 de Mayo, Saladillo, Carhué, Villa Iris, La Larga, Lobos, Las Flores, General La Madrid, Corneil Pringles, Villarino, Altamirano, Chascomús, Dolores, Maipú, Ayaoucho, Tandil, Balcarce, Necochea, Tres Arroyos, Pico, Victoria, Catriló, Toay, General Acha, Viedma, Valcheta, Corral Chico, Chichinales, Fortín Uno, Plaza Huincul, El Cuyles, Kura Lauquen, Punta Sierra, Cabo Raso, Camarones, Puerto Deseado, Bahía San Sebastián and Ushuaia.

The lines it is proposed to be established would be denominated as follows:

Western Line: to Corrientes and Posadas.

Northern Line: to Jujuy
Western Line: to Uspallata, San Rafael and San Juan
Central Line: to La Rioja
Neuquen Line: to Zapala and Bariloche
Maritime Litoral Line: to Ushuaia.

(2) The above project has been approved by the Ministry of War, and has been passed on to the Ministry of the Interior for study and approval.

The total cost of constructions to be put up is calculated at about \$6,665,000 ~~and~~.

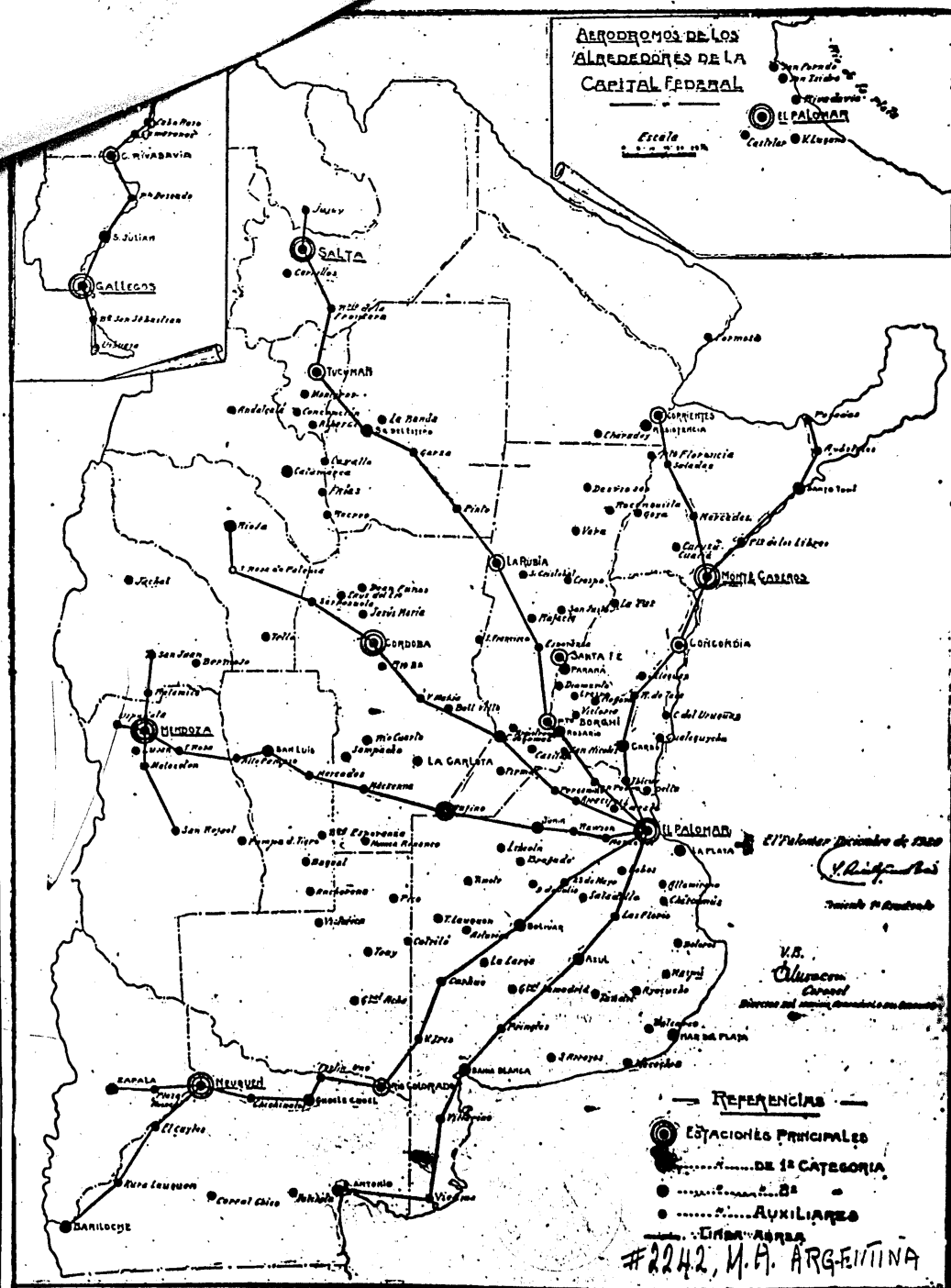
It is the opinion of the Curtiss representative in Argentina that many years will pass before this plan is carried out.

There is attached hereto map reproduced in the press showing above stations.

AERODROMOS DE LOS ALREDEDORES DE LA CAPITAL FEDERAL

Escala
0 10 20 30 40 50 60 70 80 90 100

El PALOMAR
Cachibol
Kilometro



SERVICE REPORT

SUBJECT MEDICAL EXAMINATION OF AVIATORS

From ARGENTINA

No. 2246 Date April 1, 1921

Replying to No. Date RECEIVED U.S. MAY 16 1921

In compliance with request for information contained in C.L.No.192 (M.I.D. 2610-45, M.I. 5-6, January 8, 1921) on the subject of medical aviation, there is given below a synopsis translation of an article appearing in "La Nacion", Buenos Aires, Argentina by Dr. Agésilac Milano of the Military School of Aviation.

It is not thought that anything new or unknown to the U.S. Medical authorities will be found in this article, but it is demonstrative of interest and degree of progress in this branch of medico-military science in Argentina.

"The present article is inspired, and, in part, drawn up, on an interesting work of the Italian professor Dr. Amadeo Herlitzka.

Our knowledge of the subject has been enriched in recent years by the notable works to which we have alluded, and due to the perseverance of our officers, Colonel Mosconi (Director of Aeronautics) and Major Jorge B. Crespo (Director of Military School of Aviation) we shall shortly install an institute of psico-physiology in which we can carry out the minute examinations to which are future military pilots will be submitted.

With the termination of the European War, Argentina has entered into an era of perfecting her military aeronautics.

Aeronautics and aviation have a great future before them, and for proper development two equally decisive coefficients are needed: "material" and "men".

Inasmuch as Argentina is concerned, material is derived principally from foreign industries at the present time, but once we have achieved perfection in manufacture we will be independent; men, the superior material of the "criolla" (native) mark we have---the question is to select them.

During the sporting epoch of aviation it was not possible to consider selecting aviators; anyone who felt they had sufficient energy to take up did so, and if the necessary qualities were lacking, the sportsman paid the price. It was what might be called the "heroic period of aviation".

When aviation was transformed into an indispensable branch of the army, requiring thousands of aviators, it became impossible to contemplate carrying on with heroes only. It was then also that it was discovered that a large number of student pilots did not have the necessary "ability" to make them efficient war aviators.

Due to these conditions, a large proportion of men, after having lost months and months training at the aviation school, and destroyed extremely costly machines, costing the State thousands of pesos, had to be excepted from the service.

Some of these men managed to get their brevet, in spite of many personal deficiencies, but later were the victims of an accident which meant loss of life and material.

An investigation carried out by British doctors demonstrat-

Binding Margin

so that a large proportion of aviation accidents are due to negative qualities of the pilot, and not to defects of the machine.

It was therefore decided by the Governments of the countries engaged in the late war to establish precise rules for the admission of men into the air services.

Italy was one of the most progressive countries in connection with this work, and it is believed that Argentina should adopt the system of said examinations---naturally with some modifications. Not only should prospective aviators be examined but also engine-drivers, chauffeurs, etc.

The first examination to which the candidate is submitted is the so-called clinical examination. In the army, this has already taken place in the unit from which the candidate comes, but it is insufficient for the aviator. A particularly robust looking individual may have some hereditary stigma. Hence a special examination is made comprising the state of nutrition; state of development of muscles and skeleton or bony structure; integrity of breathing apparatus and of circulation. Analysis of urine; blood pressure; amount of air which can be contained in the lungs. In suspicious cases, no matter how small the suspicion, the lungs are examined with X rays, which permit identification of the smallest initial lesion. If there is any doubt concerning the heart, the electric currents of same are registered. A special examination is made of the nervous system, and the candidate's past life, particularly referring to health and sport record. The candidates who have successfully passed the foregoing are then turned over to the oculist. A thorough examination is then made of the eyes. The pilot should be able to see from afar, especially in war time, when, to distinguish an enemy plane at a great distance already implies a considerable advantage over the adversary. This is the reason that visual sharpness is determined at a distance of 5 meters in the test, which is practically the same as measuring same at any other distance. The pilot carries on board a variety of instruments, and he must confront the terrain over which he is travelling with the map before his eyes. Thus he must fix his eyes continually and alternately far and near, hence "accommodation" must be normal in the pilot. Due to the great importance acquired by night flying, visual acuteness in the dark must also be tested. For this examination the candidate is kept in the darkness for 20 minutes, and after the 20 minutes the minimum light necessary is measured for the candidate to see and read certain signs stamped on a white and grey background. Stereoscopic sight is also measured, and finally sight for colours.

After the eyes, the ears are examined. This is very important as well for the successful pilot, and among other tests the "pneumatic bell" is used to examine the so-called function. The air in the bell is rapidly extracted, and then is pumped in again. After this experiment, the state of the membrane of the ear and the tympanum is examined. Generally an atmospheric depression corresponding to 5000 meters is reached in 25 minutes, and return to normal pressure is made in 15.

The estimation of the position of the body is also tested by means of a gyrating chair. Another test is examination of excitability of the vestibule of the ear with an electric current.

A further test to estimate the position of the body is by means of a "carlinga" of an aeroplane mounted in such a way that it can be inclined gradually to any side. The candidate is blindfolded and manages a stick. He must indicate afterwards the "line of flight".

The nose and throat are also examined. Finally the psychologist is made for rapidity of action, sustained effort, etc. cal

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TO REPLACE ALL PREVIOUS REPORTS EXCEPT #2242 (referred to on page 7)

2076-49

SUBJECT AVIATION FACTOR

From ARGENTINA-----COMBAT

No. 3361 Date July 7, 1921.

Replying to No. Data U.D. M. I. B. O. C. S. AUG--4-1921

(11) Composition

(41) Personnel.

(a) Officers

Airplane pilots	} 43
Observers and ground officers		
Airship pilots) None

(b) Enlisted men

Airplane pilots	} 5
and observers		
Mechanics.....		15
Mechanics (civilians).....		25

(c) Personages

None.

(d) Foreign Missions.

The Handley Page Syndicate has a hangar at Palomar. It has a school there also, but same is not functioning at present. There is no other foreign mission at the Aviation School at present.

(42) 1st Line.

(a) Regular establishment.

43 officers
5 enlisted men.

There have been 140 officers and men who have qualified as pilots, etc. but these would not be capable of flying a modern machine, as they are trained in the type of the old Farman pusher.

(b) Militia.

None.

Binding Margin

(14) Reserves.

(a) There are no trained military reserves.

(b) 17 commercial pilots have been trained by the Curtiss Aeroplane and Motor Corporation Co., and by other missions. Total is 21.

There are 14 students preparing to become commercial pilots.

(15) Organization

(a) Force.

(a) Grades of officers
in Argentine.

Equivalent United States

Colonel
Lt. Colonel
Major
Captain
1st Lieut.
Lieutenant
Sub-Lieut.

Colonel
Lt. Colonel
Major
Captain
1st Lieut.
2nd Lieut.
None.

(b) Enlisted men

Sergeant Major
1st Sergeant
Sergeant
1st Corporal
Corporal
Conscript
Soldier

Sergeant Major
Sergeant (1st Class)
Sergeant
Corporal (1st class)
Corporal
Conscript
Soldier

(c) Administration

The organization is known as the Aeronautical Service of the Army. It was formerly under the Engineer Corps.

An appropriation of \$1,500,000 pesos paper was appropriated for the Fiscal Year ending 1920, all of which was expended. There has been no appropriation made for the Fiscal Year ending December 31, 1921 and payments are two months in arrears.

Pay and allowances: 25% extra for officers, 50% extra for enlisted men engaged in flying. Also time is computed as on campaign and is double for retirement.

(a) Tactical Units. At the present time there are no tactical units. It is the intention at the end of the calendar year 1921 to have 3 squadrons consisting of the planes enumerated in (21) (32) (a)

(45) War.

There are no plans for war.

(46) Mobilization

The only personnel that could be mobilized are the 21 commercial pilots who are trained with modern machines.

(18) Description

(17) Statistics

(42) Political

(44) Territorial

The only place where there are an air station is at Palomar 15 miles northwest from Buenos Aires. There are located the aviation airport and workshop. There is material (8 complete sets) for repairing airplanes, and 5 airplanes a day can be repaired.

(17) Discipline

(50) Individual

(a) The type of the officer and enlisted man is very good. Attitude and intelligence are good. A marked improvement has been noted in the past year (1920-21). The majority of officers are pro-German.

(b) Discipline is enforced by the ordinary military tribunals; also passes are withheld, not permitted to fly, etc. all of which is effective.

(51) Unit

The discipline of the unit is good, much better than it was in the past.

(52) Commanders

(a) The commanders are much interested in their work.

(b) Professional ethics are good, that is, according to the Latin character.

(c) As a whole the commanders are against the present Government, but this does not affect their discipline particularly.

(18) Morale.

(53) Sentiment

Officers and enlisted men both respect their superiors and subordinates. As a whole they are much interested in military service, and are well satisfied with the system of universal training.

(54) Elan

It is believed that the personnel of both officers and enlisted men would have much dash, spirit and ardor in an attack.

(55) Stamina

The stamina, staying power, virility, strength and vigor are good.

(19) Training

(56) Individual

The Army School of Aviation started in 1912 at Palomar, 15 miles west of Buenos Aires. The location is ideal.

The old buildings are now being torn down, or improved and reconstructed of brick and cement, 20 at the present time.

There are several book and art shops, etc. One no building is capable of sheltering 40 air lanes.

The Elementary and Advanced schools are combined.

The following are taught:
Preliminary Flying
Cross Country
Acrobatic

In ground work the students receive the following instruction:

Wireless
Meteorology
Machine Guns (on ground)
Use of Compass
Topography.

(c) Ability as pilots.

The pilots are over-controlled in their flying. This is not considered due to racial characteristics but to poor training.

Mechanical sense is poor.

(d) There are no reserves.

(e) Commercial pilots

There are three training schools at Buenos Aires; one at Rosario, and one at Necocoea about 190 miles south of Buenos Aires.

There is also the Curtiss Aeroplane and Motor Corporation at San Fernando. This is where most of the Argentine commercial pilots licensed after the World War have been trained. Seventeen pilots have graduated from this school.

The Handley Page School at Palomar. One pilot has been trained at this school.

Sociedad de Aeronautica Italo-Argentina at Castelar. Three pilots have been turned out by this school. It is using the material of the old Italian Mission that was in Buenos Aires from 1919-1920.

Escuela Curtiss de Aviación is the name of a school situated at Necocoea (Province of Buenos Aires,) but it has no connection with the Curtiss Aeroplane and Motor Corporation school at San Fernando. The school uses Curtiss material.

(59) Arms.

Revolver(Colt) and various others, also carbines.

(60) Clothing

There is no special clothing issued to the Air Service. If the individuals wish it, they must purchase it themselves, but all officers are provided with leather coats. There is no heated clothing.

The badges worn by the officers of the Military Aeronautical Service are as follows:

- OFFICERS: a) The regulation badge as per Superior Decree of date Nov.7,1913, (B M No.778, 2nd Part).
b) Non-commissioned officers, aeroplane pilots: an eagle of 5 cms. long by 8 cms.wide; non-commissioned officer pilots of free balloon a Phrygian cap sustained by two outstretched wings. Same dimensions as former.

Non-commissioned officers for aeroplanes (motorists): A small motor for one. Diameter with projection of 1 cm. height. These bases will be worn on the right side of the sleeve above the insignia of rank. They will be of fine gold embroidery.

The non-commissioned officers of the previous categories shall wear uniform of fine cloth, boots of the "archivista" (black type) and insignia similar to those of non-commissioned officers of the Indian Service.

(c) The Military Aeronautical Service shall wear the Engineers uniforms and, as an emblem, a flying dragon in an attitude of offense.

Insignia of rank.

The device to denote grade of rank consists of a metallic radiant sun set upon the cloth field of the shoulder strap. These "suns" are arranged according to a simple system as follows:

Colonel:	3 gold suns
Lt.Col:	2 " "
Major:	1 " "
Captain:	3 gold suns (equidistant)
1st Lieut:	2 " " on each strap
Lieut:	2 suns on each strap, one gold and one silver
Sub.Lt:	1 gold sun in center of the shoulder strap.

With full dress, a gold epaulette for all officers is added and this slides under and is held in place by the shoulder strap.

In the field uniform the rank of an officer appears only on the above described shoulder straps.

On the full dress coat the rank is also marked on the cuffs by an arrangement of the metallic suns in number according to rank.

On the "gorra" (caps, dress and garrison) and on the "sombrero" (campaign hat) of all officers and men the following devices are worn:

In the front and center and in the upper part(half) of the crown of the head apparel is a disk about one inch in diameter. This disk has a border of sky blue and a center of white (the Argentine colors) and is a "national" badge. Just below this disk is the device indicating the number of the regiment or staff department, etc.

On the front of the khaki caps of enlisted men is a small piece of cloth of color of arm of service. This piece of cloth is in the center of the cap and forms a background for the lower devices above described.

Concerning enlisted men the 1st Sergeant wears a chevron or "jineta" of four bars of gold lace on cloth base of color of arm of service. It is worn on the upper arm on both sleeves, and on all uniforms---point up. The sergeant wears a chevron of one bar of gold lace on cloth background of color of arm of service and it is worn on both upper sleeves---point upwards. The corporal(first class) wears an emblem or stripe consisting of two bars of gold lace on a cloth base of color of arm of service. The corporal wears one bar of gold lace mounted on cloth base of color of arm of service and is worn as described for 1st Corporal.

The chevron of a sergeant major is similar to that of the 1st sergeant with bars of gold and silver lace, arranged in order as follows: gold, gold, silver, gold, gold. All chevrons are worn point upwards.

(31) Organization

(32) Equipment

(a) Airplanes.

No.	Mark	Motor	H.P.	Type	Observation
20	Avro	Le Rhone	110	Rotary	Training
4	Curtiss J.N.	Curtiss	50	3 V	"
1	Bristol	Hispano Suiza	300	Fixed	Fighter
17	S.V.A.	S.P.A.	225	3 verti- cal	"
1	Spad	Hispano Suiza	220	3 V	Scout
1	Spad	"	180	3 V	"
1	Nieuport	Gnome	160	Rotary	"
45					

(b) Airships----none.

(c) The Army has no commercial planes adaptable for warfare. There are three Bristols, 1 Curtiss Oriole, a number of S.V.A.'s and a few other types in commercial or private use in the Argentine Republic.

(d) Engineer Equipment----none.

(e) Ordnance.

There is no airplane armament. There are no planes equipped with machine guns. There are Maxim, Vickers and Lewis.

(f) Signal Corps. There is a supply of cones and T's.

(33) Transport.

(a) There are two light touring cars and three light trucks for transporting supplies---but not for planes.

(34) Communications.

(a) There is one radio outfit.

(b) Telegraph and telephone----none.

(c) Visual signals-----none.

(35) National

(a) Factories of planes, ships and motors----none. Probably none in war.

A repair shop at Palomar is available to civilians for repairs at a "cost-plus" basis - 15%.

The plant also the civilian repair shops in Buenos Aires operating on a small scale, but turning out some good work on wings, fuselages, etc. These firms are Siriano & Co. and P. C. C. and Co.

(b) All landing fields are to be of a standard size of 36 hectares.

According to the plan drawn up by the Director of Aeronautics aerial stations will be established all over the Republic. Due to the flat plains a landing may be effected almost anywhere in Argentina, notwithstanding this, the stations will be equipped as well as possible.

Concerning the location of these stations see Report #2242, March 30, 1931.

Of the stations noted therein the following fields have been obtained to date for the future erection of station:

- Cordoba
- La Rioja
- Catamarca
- San Juan
- Mendoza
- San Luis
- La Rubia (province of Santa Fé)
- Pinto (Santiago del Estero)
- Graza (Santiago del Estero)
- Zarate,
- San Pedro
- San Nicolás
- Rafaela
- Santiago del Estero
- Rosario de la Frontera

At Palomar the field is 1500 m. by 2000 m. and is 15 miles N.W. of Buenos Aires. It is well drained, has a good location. It is possible to fly in bad weather. It can hardly be said that there are any prevailing winds.

The Curtiss field at San Fernando is 15 miles north of Buenos Aires. It is 300 m. x 300 m. The field is a poor one, and is low.

The River Plate Aviation Co. has its field at San Isidro 13 miles north of Buenos Aires. It is 500m. x 600 m. A good field and is drained.

The Sociedad de Aeronautica Italo-Argentina has its field at Castelar 18 miles west of Buenos Aires. It is 300 m. x 400m; good; drained.

There are other fields in Buenos Aires, Rosario, Pergamino (250 K. north of Buenos Aires), Mendoza, Necochea, Balcarce (300 K. south of Buenos Aires) Bahia Blanca. All of these places are provided with hangars.

As a matter of fact a landing may be made almost anywhere in the Republic as it is one immense plain.

(c) There are no plans of control of supply, manufacture etc. in time of war as far as is known, but undoubtedly all manufacturing establishments would be taken over.

(d) Raw materials. There is a native wood called petiribi to make planes and propellers, but it is not as good as United States wood used in airplane construction.

Castor oil beans from the Chaco are plentiful.
Rubber, fabric, dope and varnish are imported.

(11) Artistic Plans

Aerial defense. None.

(12) Passenger

None.

(13) Interior

(a) Airports.

(b) Inter-communicating routes, throughout country.

With headquarters at Tucuman, Province of Tucuman, there is at present established an aerial service to 11 stations in the vicinity. 3 planes are engaged in the service.

Plans for the immediate future include the establishment of a line from Coracoba to Catamarca---trip to be made in 12 hours---at present it takes 2 days in the train.

Air routes will also be made across the Province of Buenos Aires from N.W. to S.E. As will be noted by consultation of a railroad map all the lines run from N.E. to S.W.

At the stations in the interior, which have been selected, there are sheds, minor repair shops, gas, oil, etc.

(119) Strategic Aspect.

(a) The sentiment of the people toward aviation is favorable. Colonel Mosconi, the Director of the Aeronautical Service reports that in the course of his recent trip through the interior he noted considerable popular enthusiasm for aviation, the encouragement of the press is general and the atmosphere distinctly encouraging.

(d) General estimate of self-sustaining ability of the country in regard to aviation.

Colonel Mosconi stated that by January 1923, the Palomar Aviation Shops would be equipped to turn out an airplane a day. (This statement is doubted by the writer). He also stated that Argentina will be able to supply all aviation material except wire.

There are now 170 civilian workmen at Palomar. It is expected that by January 1923 there will be 300.

(120) Seasonal Aspects.

The climatic conditions are very good and there is nothing which can be said to affect flying.

(125) National

(126) International

(127) Treaties.

There are no laws, national or international nor treaties concerning aviation.

Although there are no treaties concerning aviation or anything similar there is a project on foot of creating an aerial line between Spain and Argentina.

The Aero Club of Argentina has sent communications received from Spain, via diplomatic channels, to the Argentine Ministry of Foreign Affairs. Besides, negotiations are being carried out in Portugal and Brazil to facilitate the execution of the idea.

It is stated that the plan has been carefully studied by military and civilian technical experts, and the idea has received the approval of the King of Spain.

According to this plan, trips between Spain and Buenos Aires will take place regularly leaving Cadiz, and calling at the Canary Islands, Cape Verde, Pernambuco and Buenos Aires.

For the journey a semi-rigid dirigible with a capacity of 67,5000 cubic meters, run by seven motors of 300 H.P. each or 2,100 H.P. The type of dirigible to be used can travel 6,300 kilometers without stops and transport 40 passengers, besides the combustible necessary for the trip, and food for personnel and passengers. The length of the journey in hours between Cadiz and Buenos Aires is normally estimated in 108, or four days and a half.

CURRENT EVENTS REPORT

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2076 - 10

AUG 31

SUBJECT AMERICAN AVIATION IN ARGENTINA

From ARGENTINA

No. 2366

Date July 11, 1921

Replying to No. Date AUG 19 1921

Soon after the armistice, and for the purpose of opening a market for their aeronautical industry, the Italian, French and British government each sent a mission, composed of several flying officers, from thirty to forty enlisted men and equipment consisting of from twenty to thirty aeroplanes of all kinds, hangars, search lights for night flying, aerial cameras, motor trucks, automobiles, etc. etc. On account of their official character these missions received from the Argentine Government all kinds of facilities and no end of publicity from the local press. It might be of interest to note that the Italian and French Governments spent ten millions of lire and eight millions of francs respectively in these enterprises according to their own figures. Uncle Sam did nothing of the kind to help American aeronautics or manufacturers, and if American airplanes are now known in Argentina it is due to the enterprise of the Curtiss Aeroplane Co. This firm sent a mission of its own in August 1919, in charge of Mr. Lawrence Leon, a former instructor in the Air Service.

It was believed at the time that the Curtiss Company either was not aware of the fact that European missions were already here working on such a scale or if they knew, it seemed hopeless to think of making any kind of a show with their little outfit (all the personnel consisted of Mr. Leon and one mechanic, and for equipment six machines).

Mr. Leon's ability to sell anything, when he advertised the prices of Curtiss aeroplanes, was much doubted, especially as said prices were three times as high as European prices for machines of the same power. This was the general opinion in aviation circles, and on this remark being made to him, shortly after his arrival, Mr. Leon's reply seemed rather presumptuous at the time, but subsequent developments proved that he was right, and it is thought worth while to repeat what he said as well as remembered:

"We were perfectly aware of the European missions' activities, we knew that government stock machines were offered at very low prices, we knew the magnitude of their show and all that, but we knew also that from the commercial point of view they would be a failure. There will be lots of banquets, speeches, some spectacular flying, and then everything will lie down, just like fireworks. We are also relying on the superiority of our material. The European missions brought many types of airplanes, some of them very good, but none of them appropriate for this country. What is the use of bringing fast, powerful machines in Argentina where there are only two or three civilian pilots who are able to fly them. Schools must be established first where the young Argentines can learn to fly, and what the students want as they finish their course, is a low powered slow landing plane with a reliable motor, easy to start, economical to run, and on all these points we have the Europeans beaten a mile, and we shall demonstrate it to the Argentines; I know it will

Binding Margin

take lots of flying and hard work to do it because there is a deep rooted prejudice against American motors originated years ago when expensive automobiles were imported from Europe, while those imported from the States were of the cheaper class and people used to make comparisons without comparing prices, and our European competitors are already taking advantage of this feeling in their propaganda. However, we know what our machines are, we will just get to work and let the people judge for themselves."

One never knows about the United States being behind in aeronautics but it is interesting to compare the results of the European missions backed by their governments' millions and what was accomplished by this little unaided American outfit.

The Italian mission was here ten months, most of its work consisted in stunt flying over the city of Buenos Aires, a few cross country flights were made, all of little importance except the one made by Lieut. Locatelli from Valparaiso to Buenos Aires across the Andes. The Buenos Aires-Rio Janeiro flight was attempted but ended in a crash near Porto Alegre half way down. Right here it may be stated that this flight was attempted five times with five different types of European machines and every one was crashed for the same reason: motor failure. It was an American machine, a Curtiss Oriole piloted by Eduardo Chavez the first in completing this flight and without inconvenience of any kind. An attempt was also made to fly from Buenos Aires to Asuncion without stops but here also they failed. It took a week for the pilot to get there on account of motor troubles. Half a dozen bad crashes were registered resulting in the death of Capt. Giovannardi, Alferez Sarmiento and seriously injuring three passengers. Before leaving, the mission made a present to the Argentine Navy of the entire hydro station which they had erected in San Fernando including six hydro-aeroplanes, and to the Army two S.V.A. were donated. What was left of the material (four big hangars, twelve aeroplanes, including three Capronis 600-800 H.P. and an enormous stock of spares) was handed over at a nominal price to a company which was supposed to exploit it commercially. This company went broke before any of the much advertised aerial lines were started, the material changed hands three times and the present owners (Sociedad de Aeronautica Italo-Argentina) are seeking capital to reorganize. So far five Italian aeroplanes have been sold to civilians in this country.

The French mission was here, officially six months. A hydro-aeroplane service between Buenos Aires and Montevideo was announced with Nieuport-Tellier flying boats of 400 H.P. and capacity for five passengers, but the farthest that a French hydro ever went was to Colonia, the motors were in the habit of seizing up. This line was inaugurated later with twin motored land machines and it lasted two weeks. A school was started with four Farman model 40, a regular death trap, as some of the French themselves called it. The school lasted about a month, during this time three of the four machines were crashed, seriously injuring students and instructors, and the only student that was allowed to solo, Senor J. Chico, crashed the fourth killing himself in his first solo flight. Short cross country flights were made all unimportant. Captain Almonacid crossed the Andes at dusk, when the weather is at its best, with a Spad but smashed up in landing. Lieut. Prieur also tried to fly from Mendoza to Santiago de Chile across the Andes in a Breguet 300 H.P. but lost himself, went two hundred miles out of his way and after flying for six hours crashed in landing over bad ground.

This man was the ace of the mission, and in speaking of him Captain Guichard, who was second in command of the mission, said in "La Nacion" of April 10th last, that when he landed he did not know whether he was in Peru or in Patagonia. After six months of this work all the personnel was demobilized so that they could remain here, take over all the mission's material for the price of the freight from France and form a commercial aviation company with French capital (Compania Franco-Argentina de Transportes Aereos). To make a long story short, this company went broke and liquidated after a few months.

The British concerns have done some very good flying, but from the commercial point of view they have also failed. They have two schools, but in fourteen months only three pilots were licensed by them. They have had fourteen crashes to their credit, with a number of injured and three killed. Only eight machines were sold by them to civilians and a capital of three hundred thousand dollars has been used up. The River Plate Aviation Company is now trying to get new capital and re-organize changing its name to Compania Rio Platense de Aviacion.

Mr. Leon was more practical. It was his idea, as stated in articles published in local newspapers, that aeroplanes could not be sold in a country where the aviator is still considered a hero, and where there is not a single aviation school for civilians (the old schools operated with Farman pushers and Blériot monoplanes went out of business at the beginning of the war). Aviation had first to be made popular, therefore Mr. Leon undertook to show to the Argentines that there is a short time, with proper instruction and a good machine. His first step was to ask and obtain permission from the Argentine Government to establish a civilian flying school on the same field used by the Army, situated in Palomar. The Curtiss Company has now its own field and hangars in San Fernando, 12 miles from Buenos Aires, but at the time the Army aviation ground was chosen so as to have an opportunity of demonstrating the American training method to the Argentine officials. Mr. Leon offered the Government to train an officer at the company's expense, and his offer was accepted and appreciated. By making special inducement offers he secured the enrollment of two different types of prospective buyers: one who would learn the game as a business proposition, and in carrying passengers around the country would incidentally help in making Curtiss aeroplanes known, and who would take up flying as a sport and as a practical means of transportation to his different estancias in the interior of the country, thus setting an example to the wealthy sportsmen and estancieros as well. With these three students Mr. Leon got busy alternating his instruction work with cross country flights. To demonstrate the practical side of the aeroplane he would fly, after heavy rains, when the muddy roads of this flat country would remain impassable for weeks, to some well known country residence or estancia, and show to its owners how the aeroplane by its being the best means of travel is the solution of the transportation problem during the bad season. To prove the qualities of American material he flew his training machine two hundred hours under observation of the engineering department of the Army School without doing any repairs whatsoever to the motor besides changing a couple of spark plugs. This was something the Argentines had never seen before and caused the Argentine Government to order eight Curtiss training planes. Officers of the Army Aviation School have stated that only Curtiss machines would be used for training were it not for the extremely low prices at which European war surplus aeroplanes can be bought. Mr. Leon is now assisted in his work by Mr. W. H. McMullen, also a former U.S. Army flier and some of the results of their work can be summarized as follows:

The Curtiss School was the first modern aviation school to be established in Argentina.

Four times as many students were trained in this school as in all the other schools put together.

Thirty-one Curtiss aeroplanes were sold to private people up to the present, a big number considering that the country had no civilian pilots to speak of at the time of Mr. Leon's arrival, and this is more than twice the number of aeroplanes sold by all the European concerns.

Curtiss aeroplanes with Curtiss pilots and students have flown over 3600 hours in Argentina covering the whole country from Salta to Bahia Blanca and from Buenos Aires to the Pampa, carrying a total of over 8000 passengers without the slightest accident.

American aeroplanes have the best reputation in Argentina, and with two exceptions all Argentine pilots who own an aeroplane have acquired a Curtiss while the majority of the aeroplanes sold by the European concerns were sold to European war pilots who are naturally partial toward their own machines.

NOTE: It should be stated that above article was published in the "Aviation and Aircraft Journal" of New York, and reprinted in the "River Plate American" (Jun. 30, 1921) of Buenos Aires. It is being forwarded in report form in view of its extreme interest from an aviation-in-Argentina, as well as American-prestige-in-Argentina point of view.

M. I. 2.

AVIATION IN ARGENTINA

ARGENTINA

1937

August 31

21

• Progress of the Military Aviation School.

On the occasion of the 9th anniversary of the foundation of the Military Aviation School, the following review of its recent work was published:

The machines of the School were reduced in August 1930 to a school squadron comprised of seven Caudron planes, and another scout and reconnaissance squadron comprised of two S.V.A. machines, the Spad and one Nieuport. Then the school continued to increase its matériel with successive purchases. Thus, it now has 30 Avro machines and 4 Curtiss for training purposes, and still another scout and reconnaissance squadron will be ready when the 15 S.V.A. machines and 11 Bristol are put together in the school workshops.

The new hangars have been built of large dimensions, and a new edifice for workshops. Furthermore, the construction of the new Casino for officers has been commenced, building for the Director of Aeronautics' Offices, aerodynamics laboratory and large workshops.

In the matter of training of pilots very good work has also been accomplished. In the practical course training was begun with 37 students and the course turned out 31 pilots. The course began on December 23rd of 1930 and terminated on July 10, 1931. Flights were made on 136 days of the 200, as on the other days weather was unfavorable or holidays. Hence 68% of the days were taken advantage of.

The mean total of machines used was 11.85. From this must be reduced those used for services or 6.96%. This percentage is considered very satisfactory, and shows that pilots and mechanics are both efficient.

The hours of flight on the 136 days were 1354.03 and total number of exercise flights, 2722. Of these 767 have been acrobatic flights.

Per day, the mean flights have been 72. Each machine of the 6.96 mentioned was used for one hour and a half per day.

Accidents classified by their consequences show the following: Fatal, 1; serious 3; slight, 5. Total, 8.

Thus in relation to the number of flights, which, up to the present has been the standard used to determine the security of aerial navigation, risks are 0.07%. To this must be added 11 mishaps without any consequences for the personnel which brings us to a total of 18%.

Establishing another kind of relation it is found that there was 1 fatal accident for each 2722 flights, 1 serious accident for each 4861 flights and 1 slight accident for each 607 hours.

It must be remembered however that the half of the total number of hours flown was by students and not by trained pilots.

Attached hereto is a newspaper clipping giving photographs and names of the 16 military pilots who graduated in July, 1931. This gives a good idea of the type of Argentine military aviator.

Progress of Aviation

Apparently with a view to neutralise the too optimistic reports on the progress of aviation in Argentina "La Nacion" published an article dealing with same in July 1921 in the following terms:

"Aviation feats which frequently occur in this country now by Argentine and foreign aviators have given rise to exceedingly favorable expressions of opinion on the progress of aviation in Argentina.

It must be admitted that the degree of advancement in the art of mechanical flight has made great strides here, exceptional perhaps, in comparison to other South American countries. Yet careful observation brings the conviction that the same mistakes and defects subsist as during the period of initiation of aviation---1913-1915.

The sudden and powerful impulse to which aviation was subjected placed it in a singularly advanced position.

The Argentine series of international pilots soon had 100 members, and feats of world importance were successfully achieved with very few painful sacrifices.

The total lack of any plan soon brought about a gradual decline in aviation activities, and during the following years little was done, interest in aviation being reduced to a small group of officers of the Army with little funds at their disposal.

National aeronautics were in this state of annihilation until the arrival of the foreign aviation missions. Enthusiasm was born anew and a great revival took place.

Since then evolution has been as in the first period, rapid and disorderly, resulting from isolated and incoherent efforts, without any definite plan of action having been drawn up, except that of the Director of Aeronautics.

Now the "heroic epoch" being over, the situation has varied fundamentally.

The principal European and American factories have shown an interest in our aviation activities and their plans to establish permanent transportation services are well known; foreign and Argentine capital has been invested to support institutions and enterprises of a varied character; the civilian aeronautical clubs have increased and multiplied throughout the country which is continually being traversed by pilots on commercial missions; all this is the result of varied interests and objectives sometimes concordant sometimes antagonistic.

Some steps should be taken in the way of cooperation which is the keystone of real and lasting progress in this connection."

The Aeronautic Federation of Argentina.

✓ As if in direct reply to the above article, the Aeronautic Federation of Argentina was founded on August 23, 1921.

The plan agreed on is to join forces to better develop aviation in Argentina whilst the different clubs and aviation societies preserve their absolute autonomy, in everything concerning their own particular interests.

The aims of the Federation are as follows:

To represent the general interests of aviation in the Argentine Republic and encourage development.

To promulgate national regulations concerning aviation, and international ones established by the International Aeronautical Federation, and to see to application and observance thereof.

To organize tests, exhibitions, competitions, and in general all aeronautical manifestations.

To make aeronautical propaganda with publications and by other means.

To collect all bibliographical, historical and statistical material on aeronautics in the Argentine Republic.
To contribute to the preparation and maintenance up to date of the aerological-aeronautical map of Argentina.
To patronize interests concerned in aerial navigation.

1 encl.

SERVICE REPORT

3-3

URGENT NEED FOR ESTABLISHMENT OF AEROTECHNICAL
INSTITUTION AND NATIONAL AEROPLANE FACTORY.

ARGENTINA

2532

November 7

21

THROUGH L. OCCASION
Capt. Int. U.S.A.

The following is a synopsis translation of an article published in "La Razón" on October 12, 1921.

"Anyone who visited the aerodrome at Palomar a few years ago, and returns there now cannot but be astounded at the progress made. That which was a mere aviation field, with a few improvised hangars, in spite of the most modest sums assigned by the Budget, has been converted today into an excellent aeronautical center.

The school installed there gives a mean of 40 graduate pilots per course with a solid technical, theoretical and practical training, who is able to accomplish any military test from a long distance flight to modern acrobatic flights.

The Workshops

What most surprises the visitor is undoubtedly the workshops. These are installed in an old building made of wood and sheet iron of the most humble description. Yet, the activity displayed there is feverish; the carpentry, fabric, mounting and repair of motors departments are constantly busy. Those difficulties which challenge ingenuity to overcome them, have formed a very competent personnel. Not only do these workmen repair the machines, but also undertake repairs which mean the total reconstruction of a machine, and furthermore have built various biplanes which have given absolutely satisfactory results.

Use of Argentine material.

Colonel Enrique Mosconi, the Director of Aeronautical Service of the Army has ordered the exclusive use of Argentine wood in the construction and repair of machines. This is not only from patriotic motives but also from economic ones.

In the construction of propellers with Argentine materials great success has been achieved, and it has been proved that these are as solid and efficient as those coming from foreign factories. A case in point was that of a certain number of foreign machines recently imported to this country. Either due to inferior quality of wood used or the influence of the changed climate, the propellers and other wooden parts of the machine were in bad condition. The importer requested the Palomar workshops to reconstruct these wooden pieces. The substitution was made, and at present these European machines are being flown with propellers made out of Mendoza walnut, and other parts of the machines are made of "vizaró" wood.

Revision and Adjustment

Much credit is due the workmen at Palomar for their careful work in connection with revision, testing and adjusting.

Creation of an Aeronautical Institution

The Aeronautical Service of the Army has planned the establishment of a aero-technical institute in conjunction with a national aeroplane factory.

The institution planned will not be an exclusively military one, but of a public nature, where any person interested in aviation or the industry may address himself to obtain information. Besides the aero-dynamic tests to be carried out in a specially constructed tunnel (in accordance with the most modern standards) the person interested will be able to obtain data on the resistance and composition of materials such as metal, wood, varnishes, etc.

Apart from the importance of the existence of such an institution for the encouragement and assistance of the aeronautical industry in the country, there are others equally important: work carried in the laboratory would make known in foreign scientific circles, Argentina's progress in this line of research.

It is also of great importance, as demonstrated in the World War, that a country should be industrially independent, and besides the construction of aeroplanes in Argentina would furnish work for many hands, and prevent large sums of money going abroad.

In connection with the above it is pointed out that Brazil and Chile have appropriated twice or three times as much money for aviation this year as Argentina, and without funds the best of plans cannot be carried out."

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AVIATION ITEMS----ARGENTINA G - 3 REPORT

ARGENTINA----AVIATION

2614

December 9

21

RECEIVED
U.S.A.

JAN 13 1922

(Add)

(82) Equipment

On November 29th, 1921 the Executive Power signed a decree authorizing the Direction of the Aeronautical Service of the Army to purchase the following aviation material:

From the Handley Page Co:

12 Bristol aeroplanes with armament, photographic material, wireless and wireless telephones amounting to \$183,200 pesos m/n

In Italy:

Materials and accessories for aeronautical construction, consisting amongst other items of magnetos for motors of different types, carburetors, elastic wires, Foh and Jaeger counters, cables, bronze rods, tubes, Maka fabric, etc. etc., amounting to 50,000 pesos.

Of the planes to be purchased 8 are completely equipped for war purposes, and the remaining four are to be used for training pilots.

(Add)

(124) Commercial Routes

A telegram from Berne, Switzerland published in "La Nacion" on November 23rd stated that Hugo Eckner, director of the Zeppelin works in Friedrichshafen, who has just returned from South America stated that the Zeppelin works are preparing the construction of an airship of 1500 cubic meters capacity, which will be able to develop a velocity of 60 miles an hour carrying from 30 to 40 passengers, besides postal packages and mail.

This airship will cover the distances between Spain and South America in four or five days, and Eckner predicts a complete revolution in the commercial relations between Europe and South America.

(Add)

The River Plate Aviation Co. has recently been floated in Argentina. It is a company combined of the River Plate Aviation Co. and the Argentine Aviation company of Guichard and Murat.

The company is under the management of Major Kingsley and is backed with capital totalling \$1,000,000 to which more may be added.

While aviation in common with all other enterprises, is suffering from the world-wide commercial and industrial depression, great hopes are centered on it as a business proposition of the future, and when all arrangements are completed it is hoped to run regular commercial air services between the landing towns and cities of Argentina and Uruguay.

The main object of the company during the earlier stages of its life will be the organization of a regular service between Buenos Aires and Montevideo and Buenos Aires and Concordia, and the development of the school for pilots at San Isidro.

On December 17th, the first regular trip will be inaugurated to Montevideo. Aircraft is expected to be used with 375 HP Bellis Royce motors.

The distance of 150 kilometers between the two fields is expected will be covered in one hour and 10 minutes. Passengers will be taken to and from aviation fields in a motor bus to leave the city 30 minutes before the time fixed for departure of the aeroplane.

(Add)

(5) NAVAL POWER
(24) Organization

On December 18th, 1931 the Ministry of Marine made known the new regulations governing the Naval Aeronautical Service, which had just been approved by the Executive Power.

The Naval Aeronautical Service is to be comprised of aeronautical pilots and the aviation corps. The corps of pilots will consist of the superior and subaltern personnel who have specialized in driving and running aeroplanes.

The aviation corps will comprise the personnel of the Navy which has specialized in the construction, repair, mounting, adjusting and preservation of airships, motors and material.

The members of the corps of pilots must be graduates of national or foreign aviation schools, and will be subdivided into the following branches: "naval aviation" and "naval aerostations."